Orbits comparison : GDR-E versus GDR-D

Study variable	**Orbit GDR-E**
Reference variable	**Orbit GDR-D**
Missions	Cryosat-2 *(c2)*
Period	[22307, 23899]

Creation date : 2015/07/28

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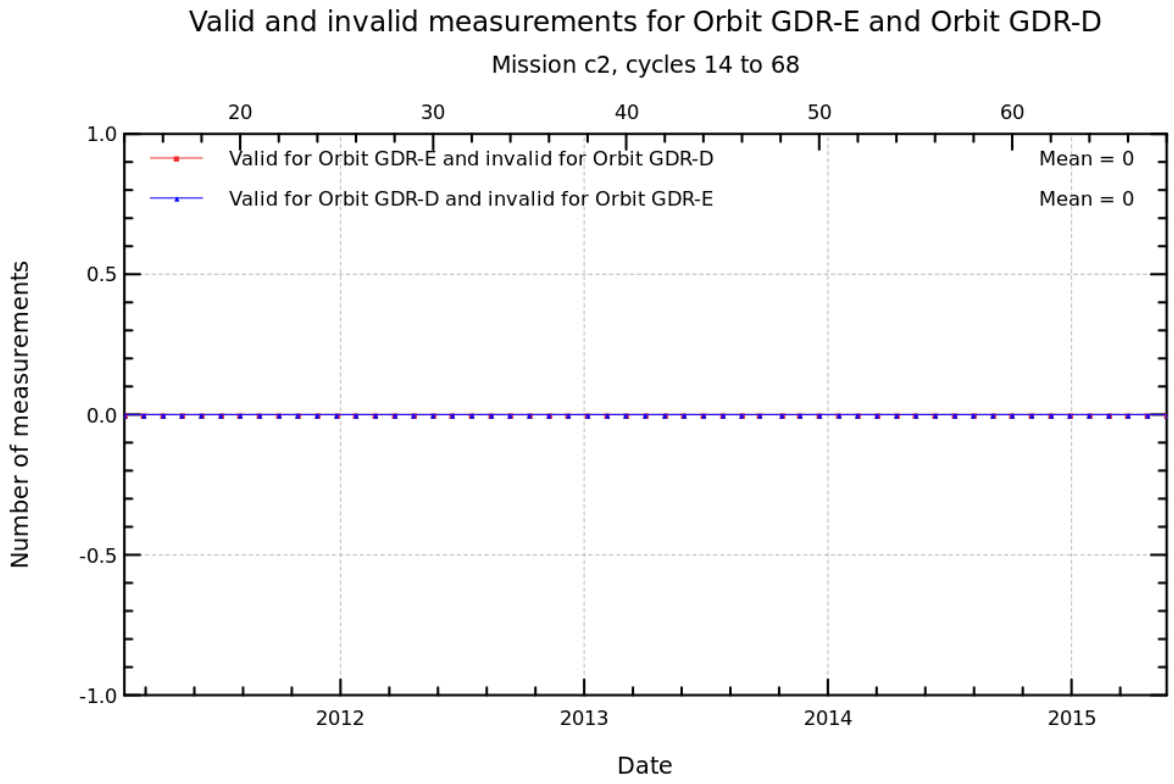
Diagnostic type : Mono-mission analyses

Diagnostic A000 (mission c2)

Name : Differences of number of valid and invalid measurements between both altimetric components

Input data : Along track altimetric components

Description : The number of valid measurements for one parameter and invalid for the other, and vice-versa.



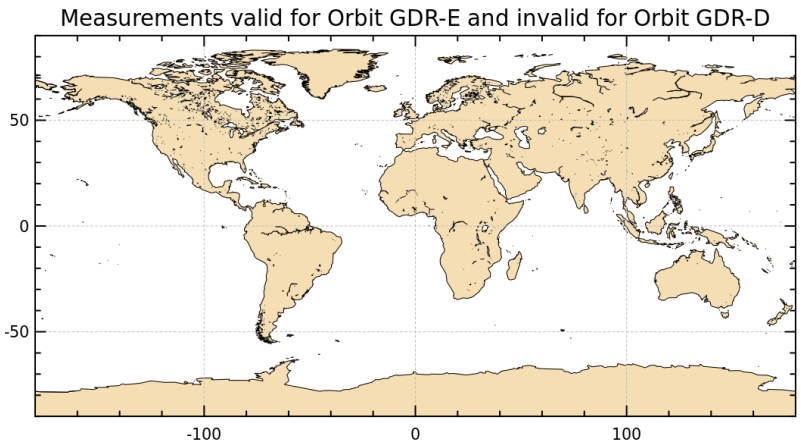
Diagnostic type : Mono-mission analyses

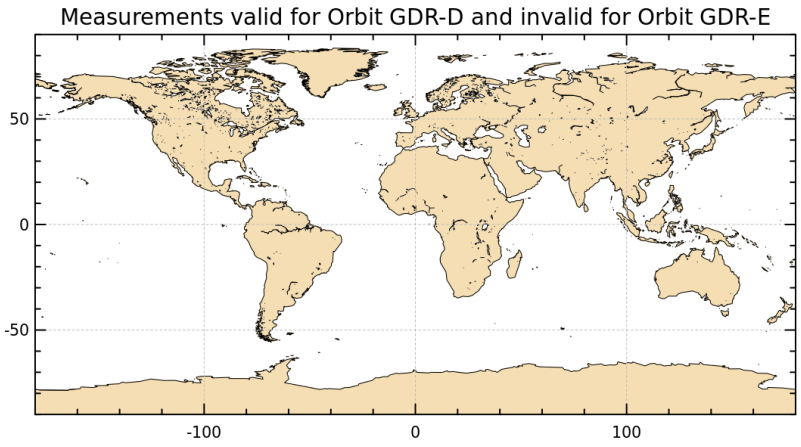
Diagnostic A001 (mission c2)

Name : Maps of differences of valid and invalid measurements between both altimetric components

Input data : Along track altimetric components

Description : The first map represents the valid measurements for one parameter and invalid for the other, and vice-versa for the second map.





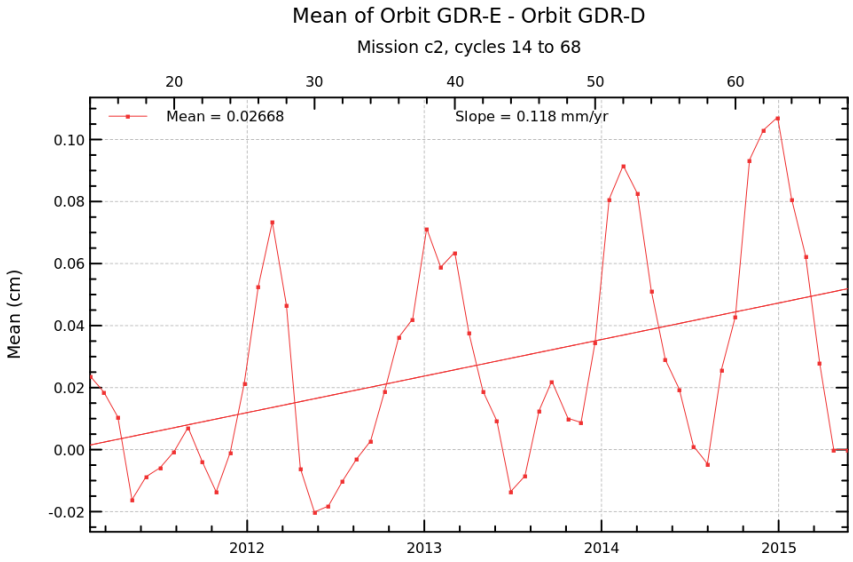
Diagnostic type : Mono-mission analyses

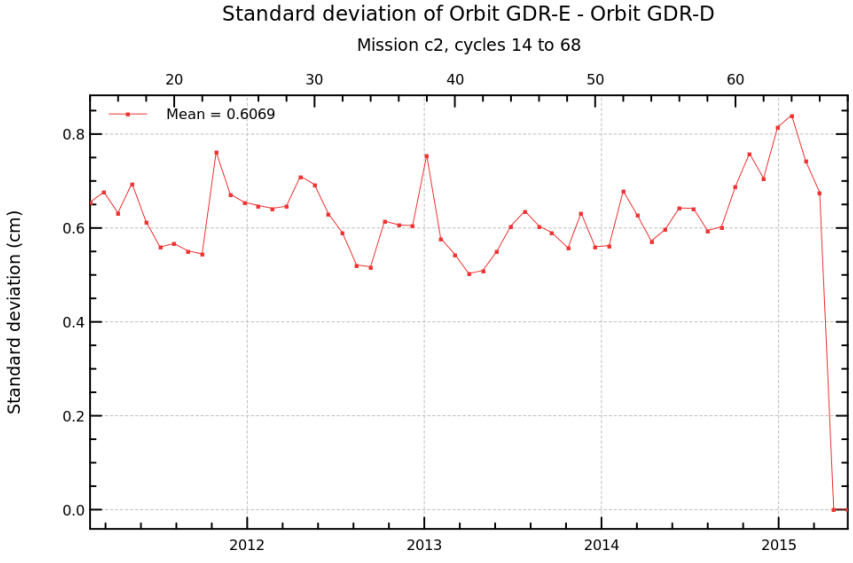
Diagnostic A002 (mission c2)

Name : Temporal evolution of differences between both altimetric components

Input data : Along track altimetric components

Description : The temporal evolution of global statistics (mean, variance, slope) of differences between 2 different standards of a same altimetric component (sea surface height correction, altimeter parameter, orbit) are calculated from a cyclic way (altimeter repetivity, daily, weekly, monthly) . These statistics are calculated from 1 Hz altimetric measurements after removing spurious sea level measurements.





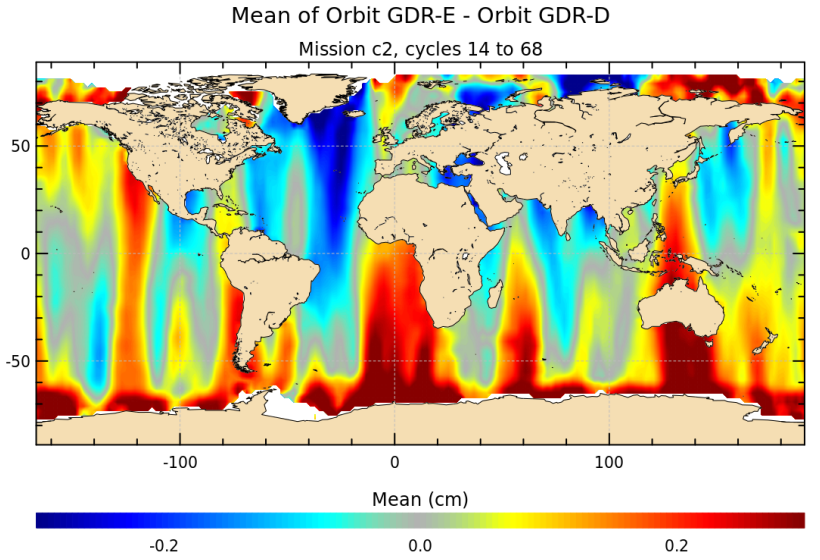
Diagnostic type : Mono-mission analyses

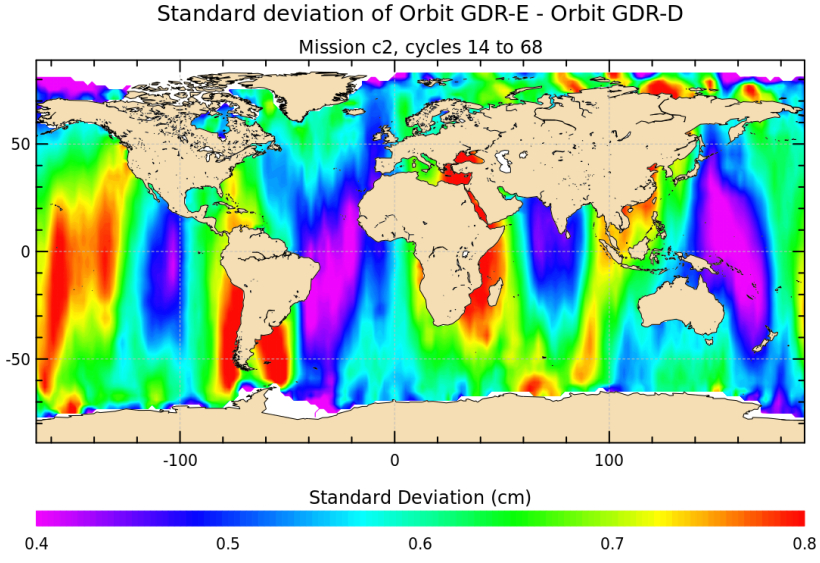
Diagnostic A003 (mission c2)

Name : Map of differences between both altimetric components over all the period

Input data : Along track altimetric components

Description : The map of global statistics (mean, standard deviation) of differences between 2 different standards of a same altimetric component (sea surface height correction, altimeter parameter, orbit) are calculated over a given period which is the longer as possible to have obtain reliable statically results. These statistics are calculated from 1 Hz altimetric measurements after removing spurious sea level measurements.





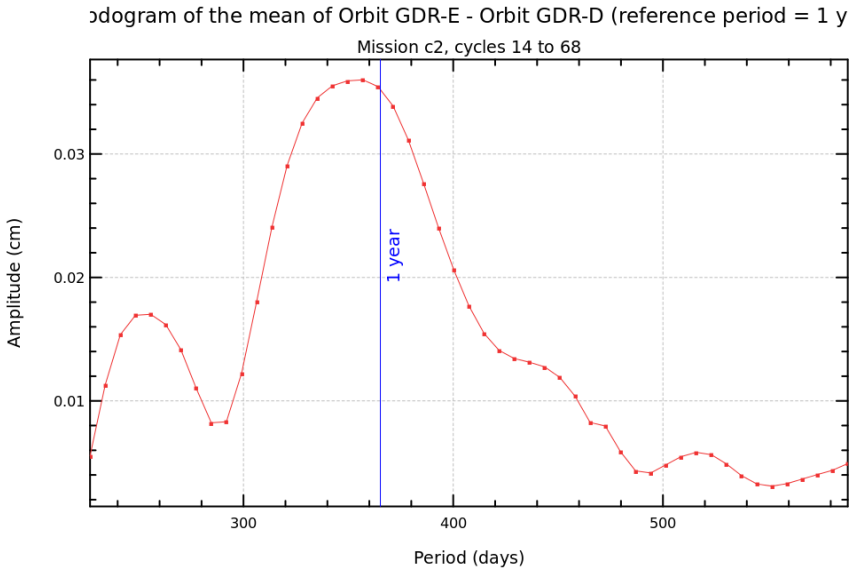
Diagnostic type : Mono-mission analyses

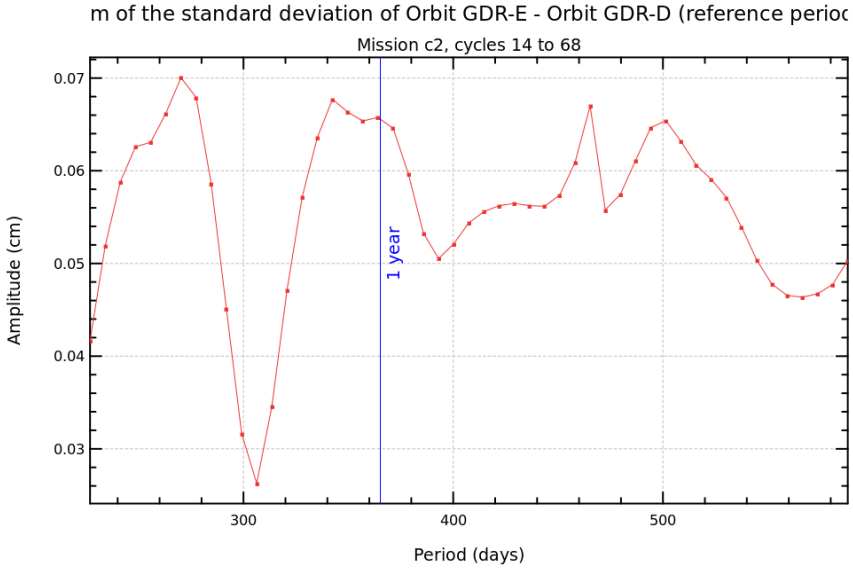
Diagnostic A004_a (mission c2)

Name : Periodogram derived from temporal evolution of altimetric component differences

Input data : Along track altimetric components

Description : The periodogram derived from temporal and global altimetric component differences is calculated from cycle by cycle monitoring of altimetric component differences (derived from diagnostic A001). It is calculated from the mean or the variance differences. The Periodogram can be calculated for all the periods, but it can be focused on a dedicated period.





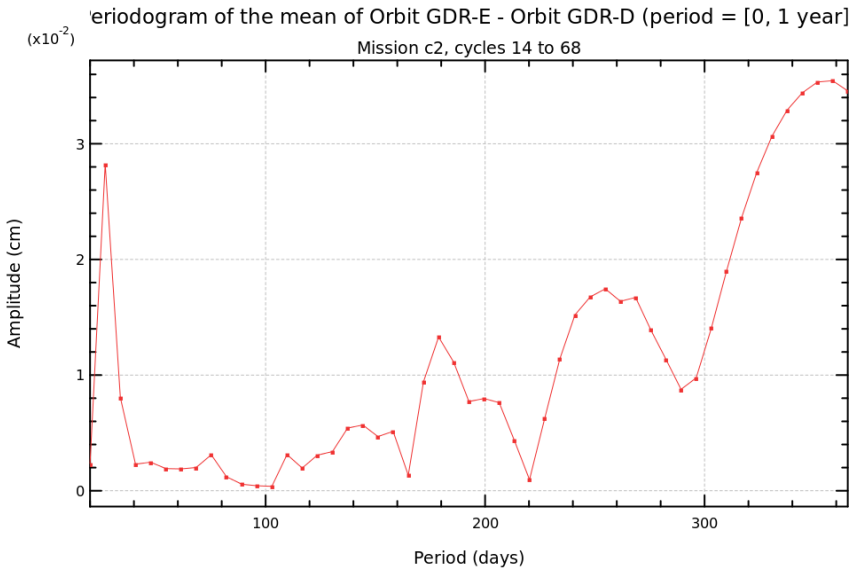
Diagnostic type : Mono-mission analyses

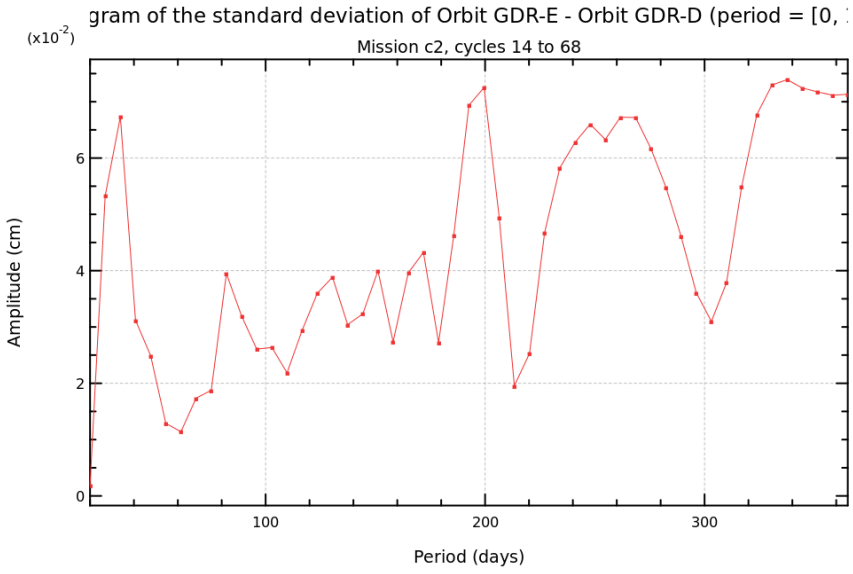
Diagnostic A004_b (mission c2)

Name : Periodogram derived from temporal evolution of altimetric component differences

Input data : Along track altimetric components

Description : The periodogram derived from temporal and global altimetric component differences is calculated from cycle by cycle monitoring of altimetric component differences (derived from diagnostic A001). It is calculated from the mean or the variance differences. The Periodogram can be calculated for all the periods, but it can be focused on a dedicated period.





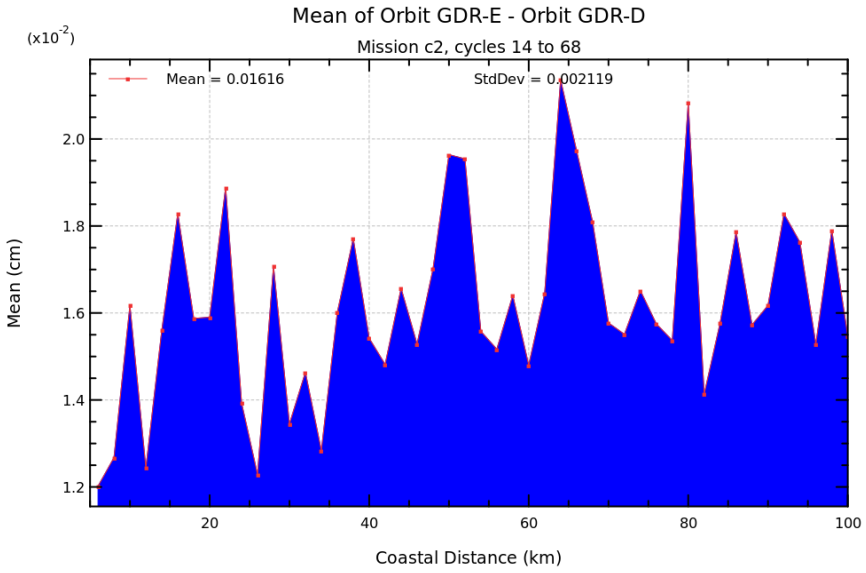
Diagnostic type : Mono-mission analyses

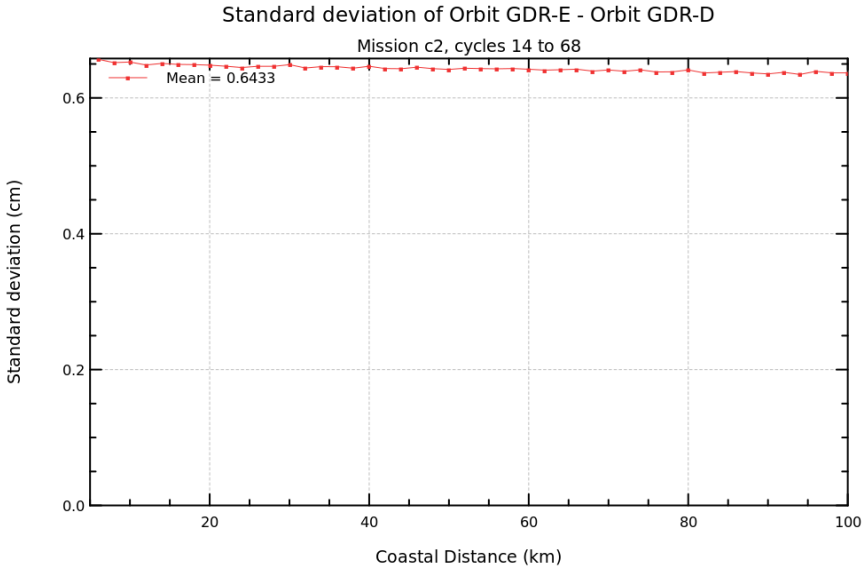
Diagnostic A005 (mission c2)

Name : Altimetric component differences versus coastal distances, latitude and longitude

Input data : Along track altimetric components

Description : Mean and standard deviation of the differences between 2 different standards of a same altimetric component (sea surface height correction, altimeter parameter, orbit) are computed and plotted in function of coastal distances between 0 and 100 km, in function of latitudes and in fonction of longitudes.





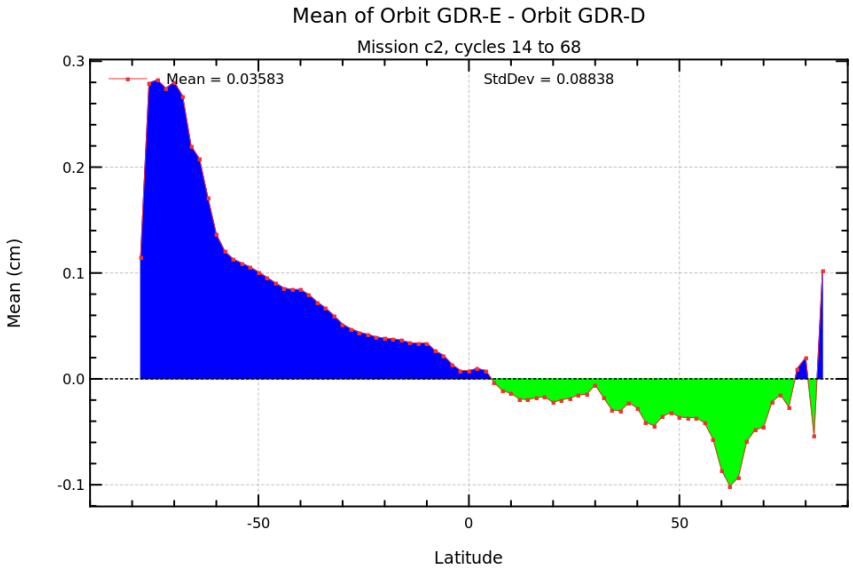
Diagnostic type : Mono-mission analyses

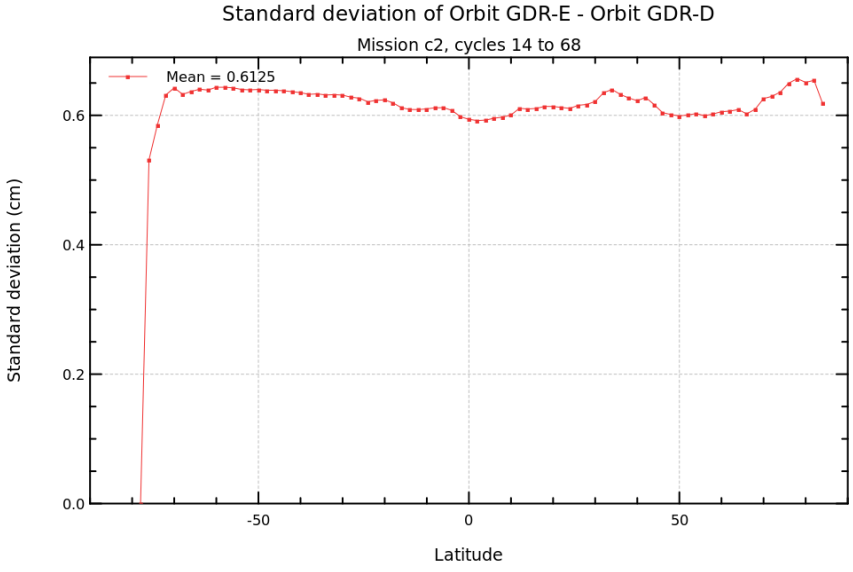
Diagnostic A005 (mission c2)

Name : Altimetric component differences versus coastal distances, latitude and longitude

Input data : Along track altimetric components

Description : Mean and standard deviation of the differences between 2 different standards of a same altimetric component (sea surface height correction, altimeter parameter, orbit) are computed and plotted in function of coastal distances between 0 and 100 km, in function of latitudes and in fonction of longitudes.





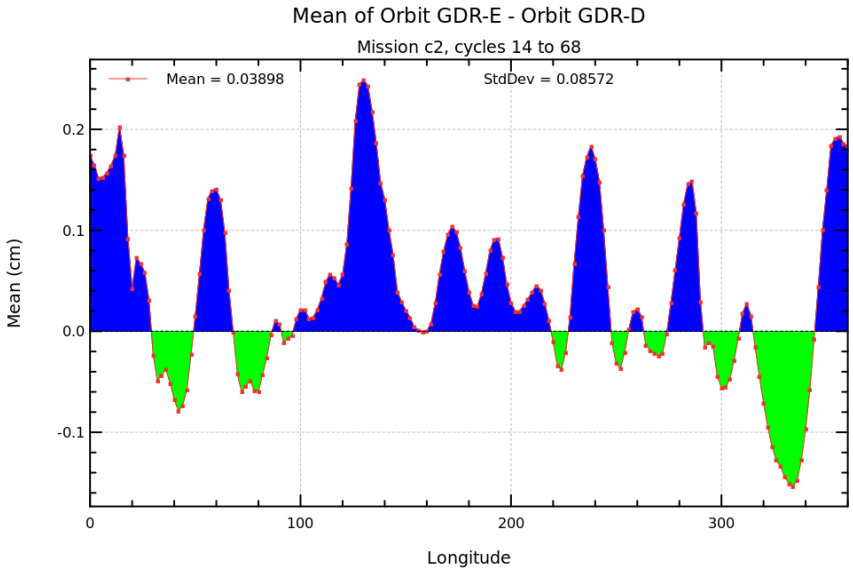
Diagnostic type : Mono-mission analyses

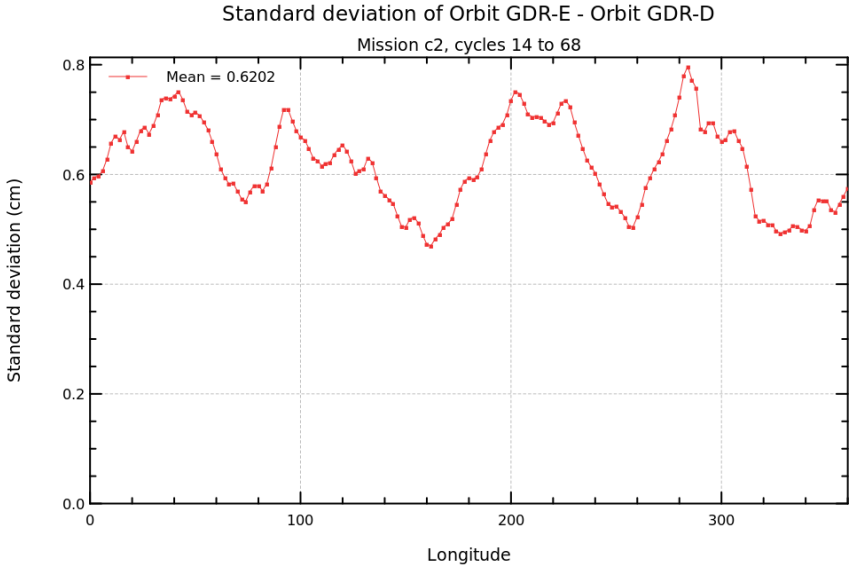
Diagnostic A005 (mission c2)

Name : Altimetric component differences versus coastal distances, latitude and longitude

Input data : Along track altimetric components

Description : Mean and standard deviation of the differences between 2 different standards of a same altimetric component (sea surface height correction, altimeter parameter, orbit) are computed and plotted in function of coastal distances between 0 and 100 km, in function of latitudes and in fonction of longitudes.





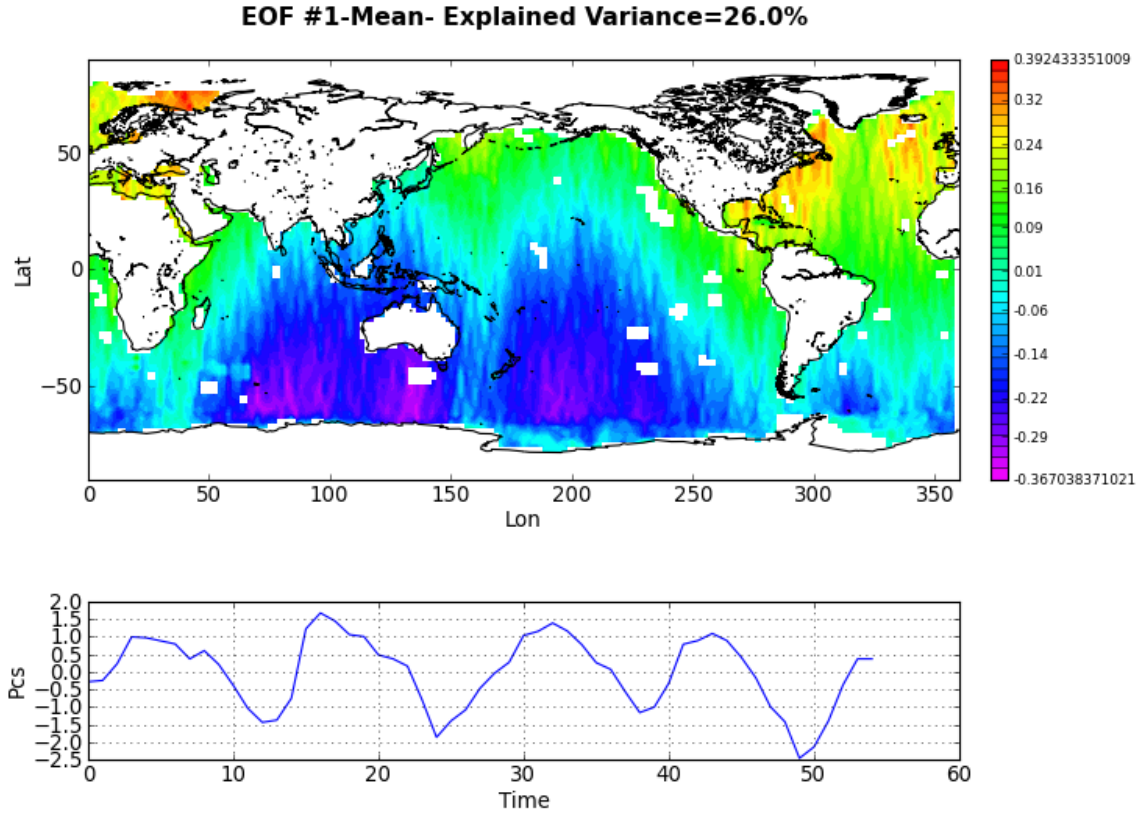
Diagnostic type : Mono-mission analyses

Diagnostic A006_a (mission c2)

Name : EOF Decomposition of Differences

Input data : Along track altimetric components

Description : The differences between map of SLA (mean) are calculated from the mean SLA maps (per cycle) using successively both altimetric components in the SLA calculation. The maps of the differences are analyzed through an Empirical Orthogonal Functions (EOF) decomposition.



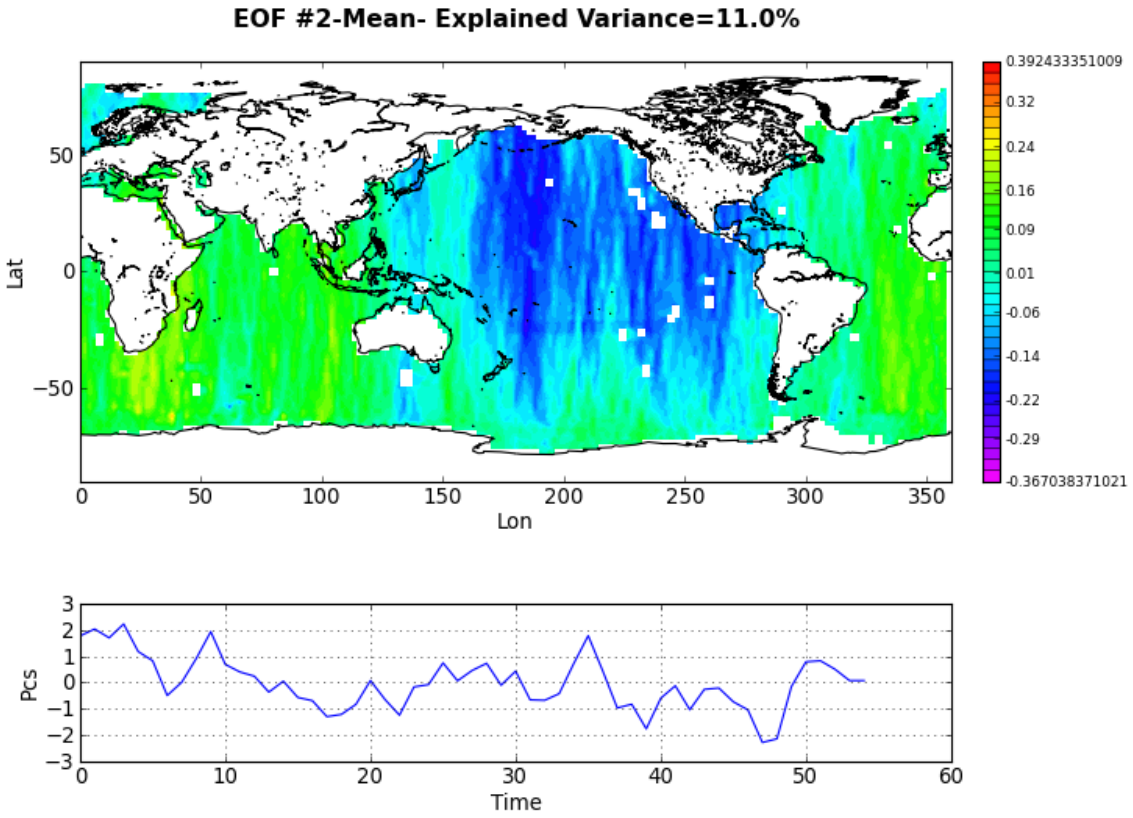
Diagnostic type : Mono-mission analyses

Diagnostic A006_b (mission c2)

Name : EOF Decomposition of Differences

Input data : Along track altimetric components

Description : The differences between map of SLA (mean) are calculated from the mean SLA maps (per cycle) using successively both altimetric components in the SLA calculation. The maps of the differences are analyzed through an Empirical Orthogonal Functions (EOF) decomposition.



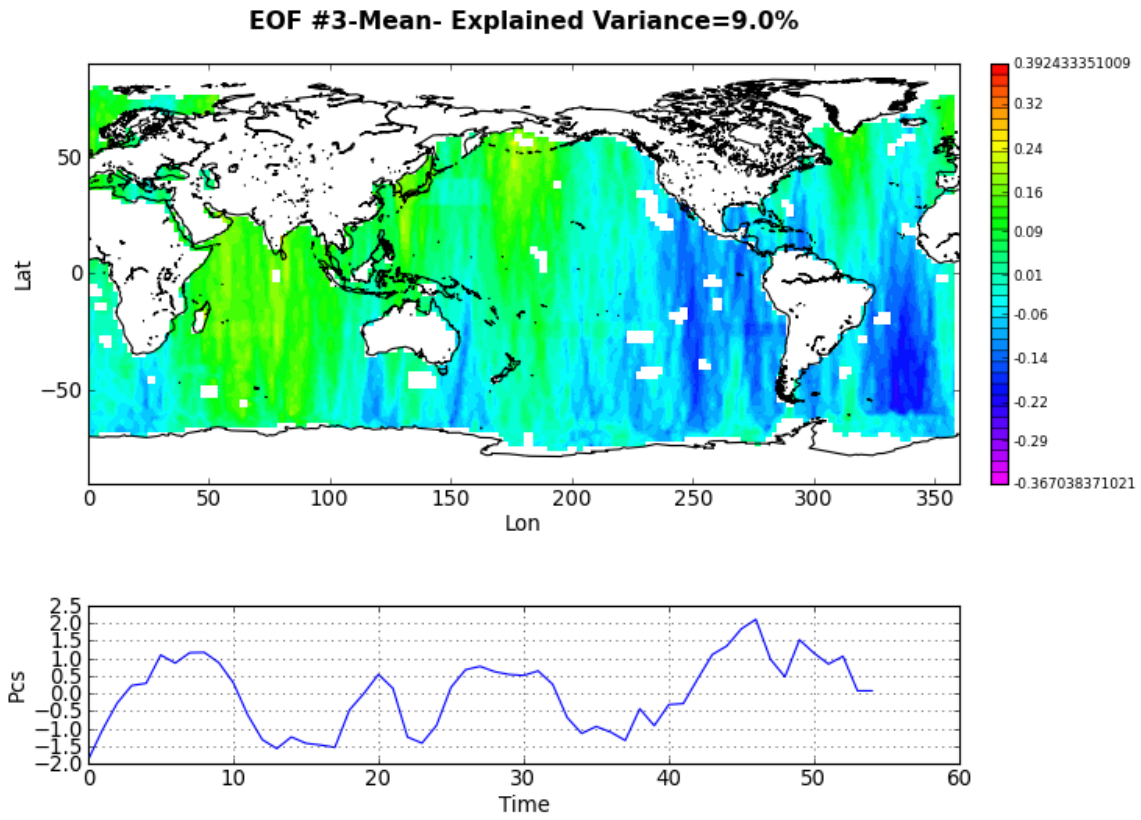
Diagnostic type : Mono-mission analyses

Diagnostic A006_c (mission c2)

Name : EOF Decomposition of Differences

Input data : Along track altimetric components

Description : The differences between map of SLA (mean) are calculated from the mean SLA maps (per cycle) using successively both altimetric components in the SLA calculation. The maps of the differences are analyzed through an Empirical Orthogonal Functions (EOF) decomposition.



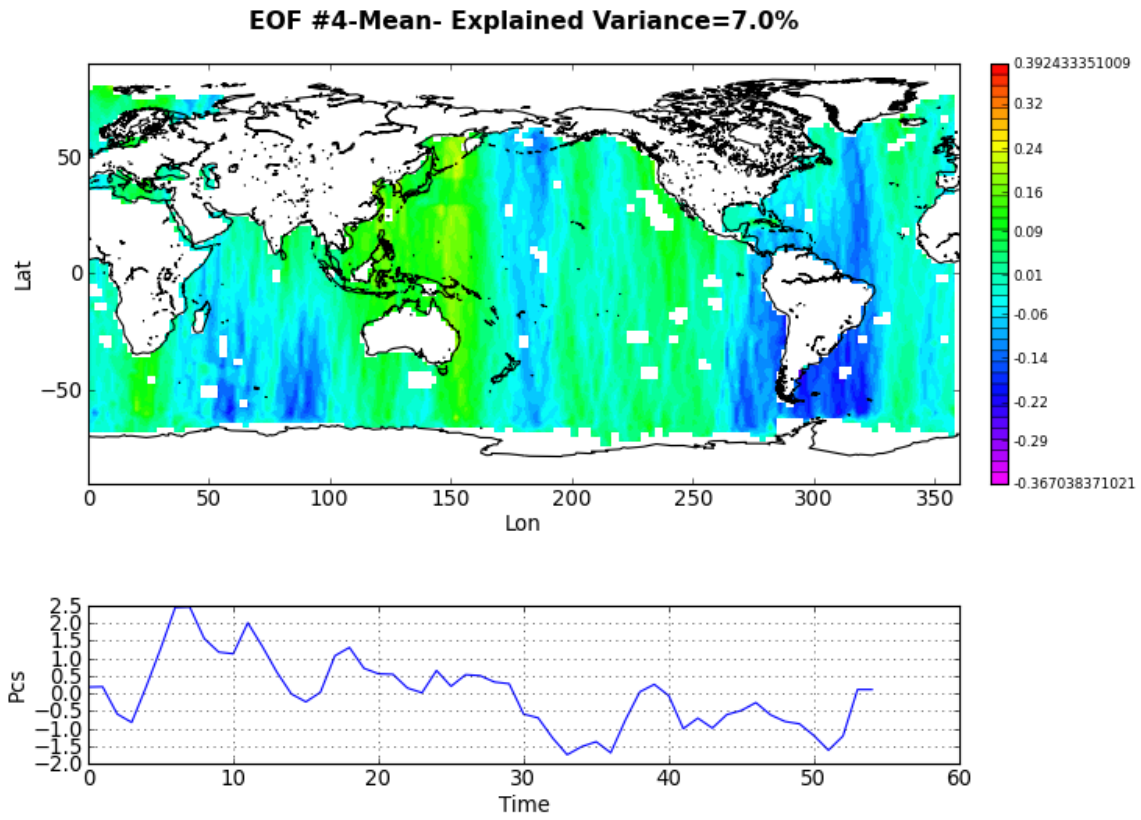
Diagnostic type : Mono-mission analyses

Diagnostic A006_d (mission c2)

Name : EOF Decomposition of Differences

Input data : Along track altimetric components

Description : The differences between map of SLA (mean) are calculated from the mean SLA maps (per cycle) using successively both altimetric components in the SLA calculation. The maps of the differences are analyzed through an Empirical Orthogonal Functions (EOF) decomposition.



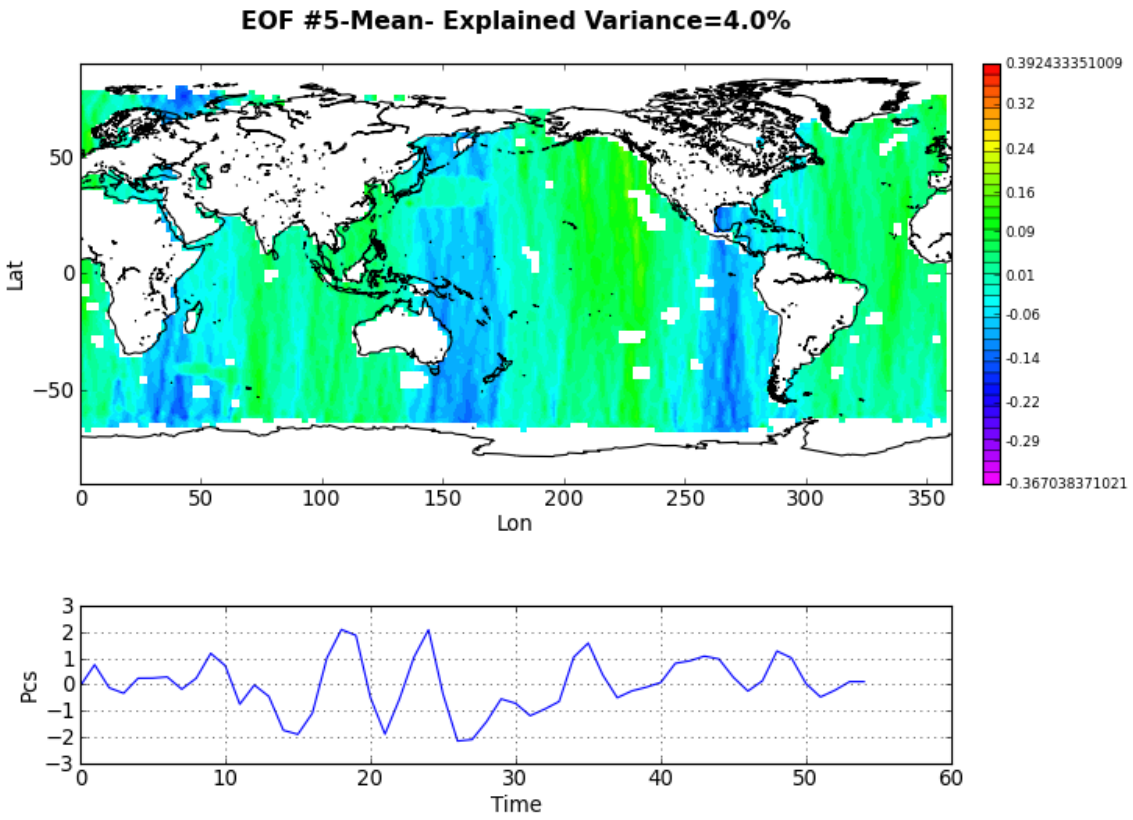
Diagnostic type : Mono-mission analyses

Diagnostic A006_e (mission c2)

Name : EOF Decomposition of Differences

Input data : Along track altimetric components

Description : The differences between map of SLA (mean) are calculated from the mean SLA maps (per cycle) using successively both altimetric components in the SLA calculation. The maps of the differences are analyzed through an Empirical Orthogonal Functions (EOF) decomposition.



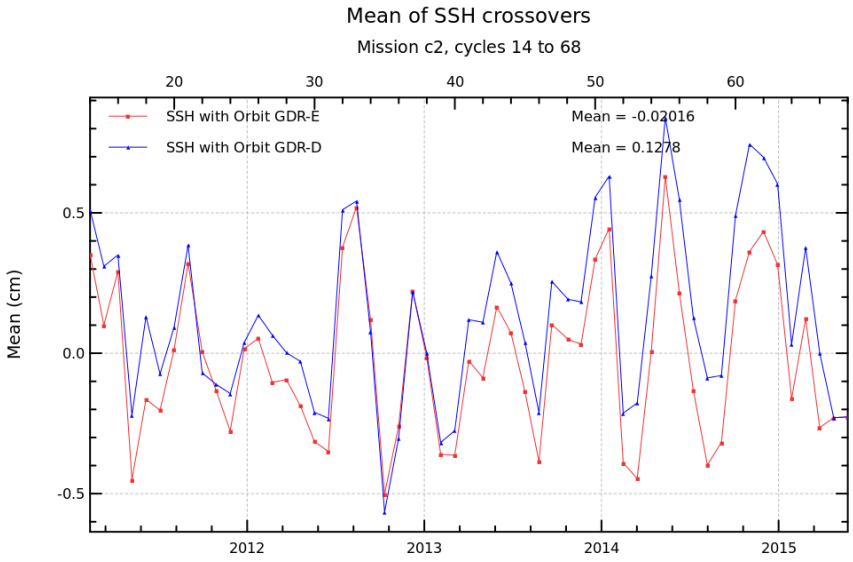
Diagnostic type : Mono-mission analyses

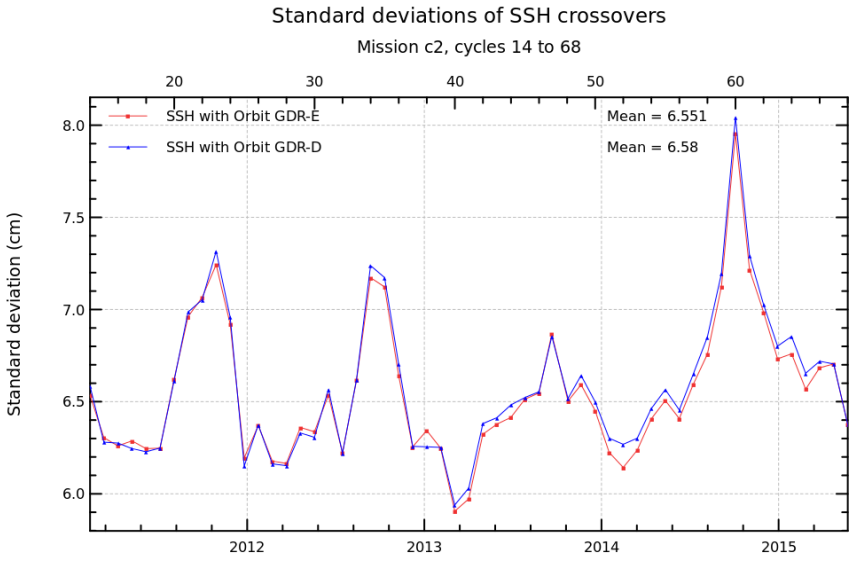
Diagnostic A101_a (mission c2)

Name : Temporal evolution of SSH crossovers

Input data : Sea Surface Height (SSH) crossovers

Description : The temporal evolution of global statistics (mean, standard deviation) of SSH differences are calculated from a cyclic way (altimeter repetivity, daily, weekly, monthly) using successively both altimetric components in the SSH calculation. SSH crossovers are the differences between ascending and descending passes for time differences between both passes lower than 10 days (in order to reduce the effect of the oceanic variability).





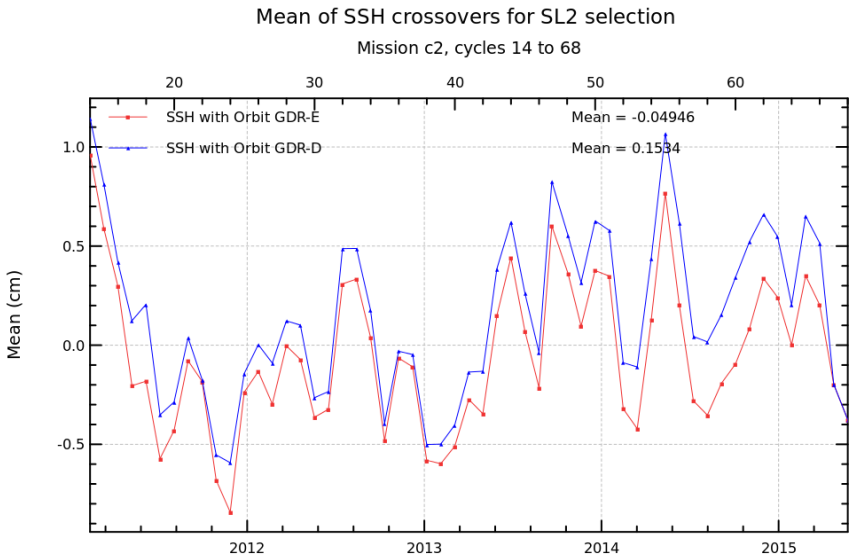
Diagnostic type : Mono-mission analyses

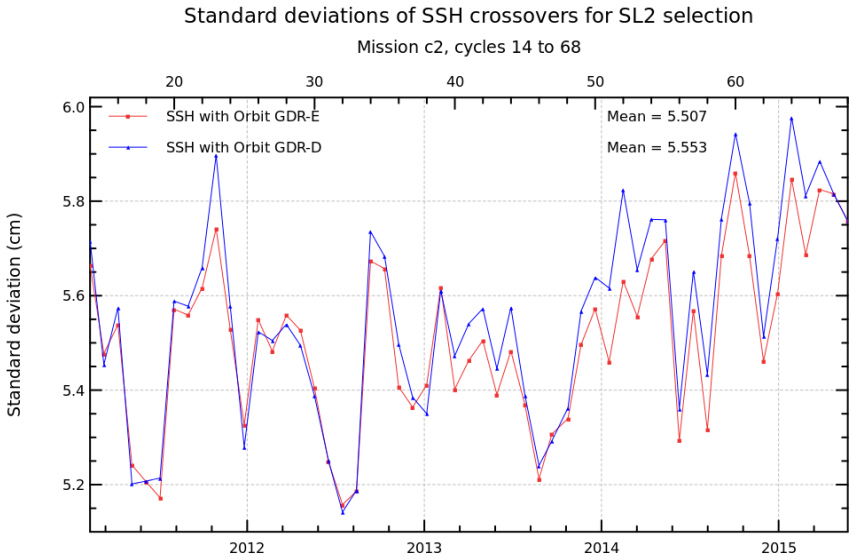
Diagnostic A101_b (mission c2)

Name : Temporal evolution of SSH crossovers

Input data : Sea Surface Height (SSH) crossovers

Description : The temporal evolution of global statistics (mean, standard deviation) of SSH differences are calculated from a cyclic way (altimeter repetivity, daily, weekly, monthly) using successively both altimetric components in the SSH calculation. SSH crossovers are the differences between ascending and descending passes for time differences between both passes lower than 10 days (in order to reduce the effect of the oceanic variability).





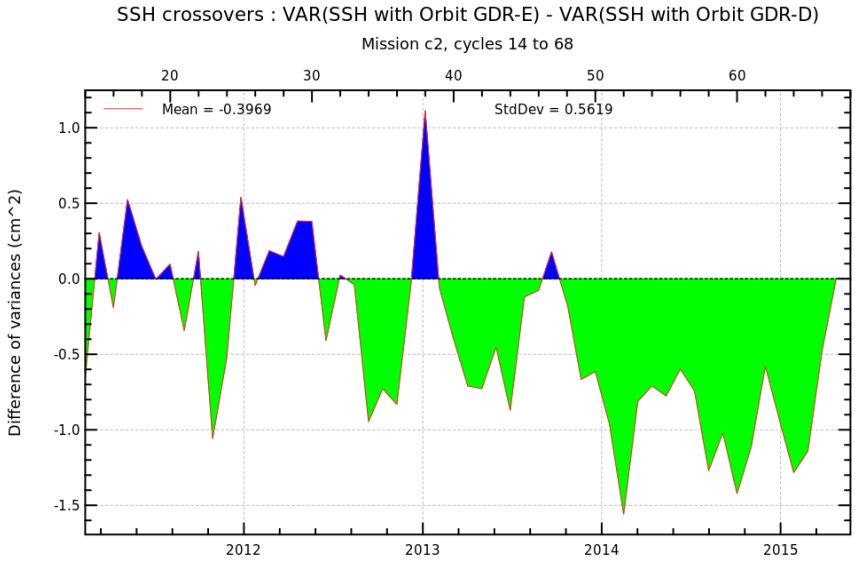
Diagnostic type : Mono-mission analyses

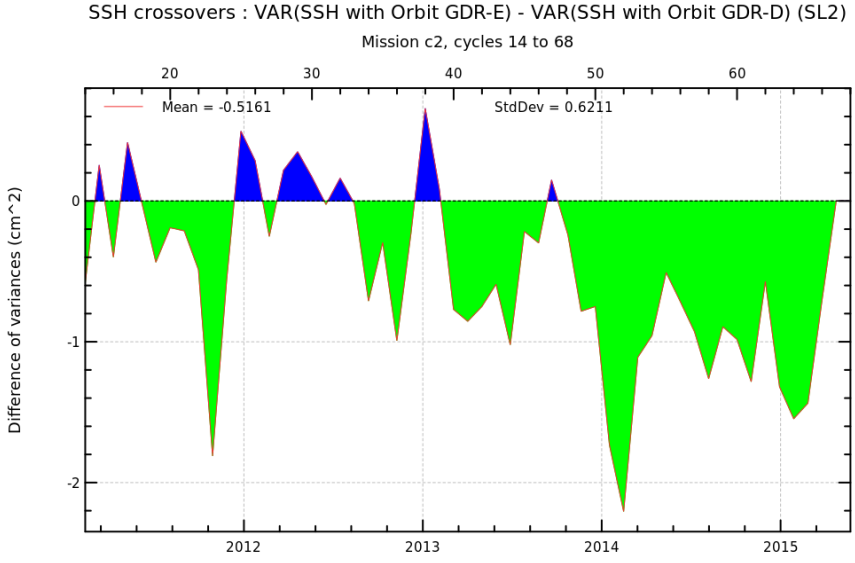
Diagnostic A102 (mission c2)

Name : Differences between temporal evolution of SSH crossovers

Input data : Sea Surface Height (SSH) crossovers

Description : The difference of temporal evolution between the global statistics (mean, standard deviation) of SSH differences are calculated using successively both altimetric components in the SSH calculation. SSH crossovers are the differences between ascending and descending passes for time differences between both passes lower than 10 days (in order to reduce the effect of the oceanic variability).





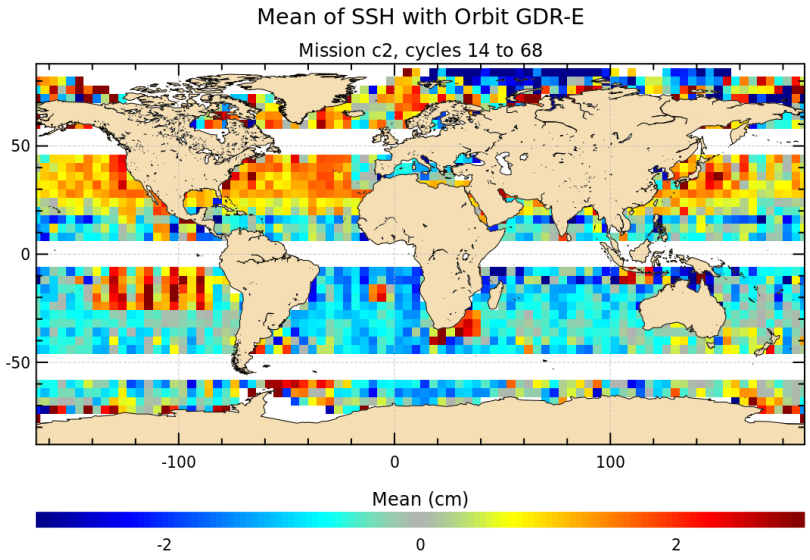
Diagnostic type : Mono-mission analyses

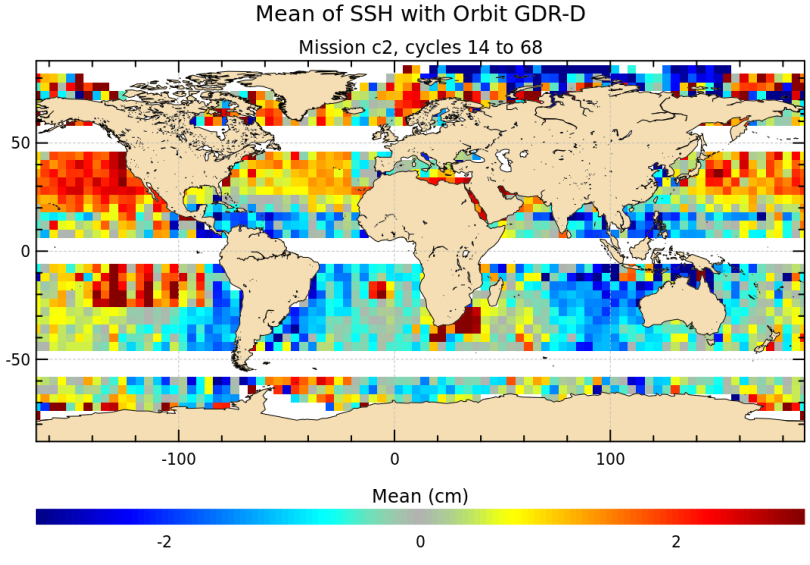
Diagnostic A103 (mission c2)

Name : Map of SSH crossovers

Input data : Sea Surface Height (SSH) crossovers

Description : The differences between maps of SSH crossovers differences (mean, variance) are calculated using successively both altimetric components in the SSH calculation. SSH crossovers are the differences between ascending and descending passes for time differences between both passes lower than 10 days (in order to reduce the effect of the oceanic variability).





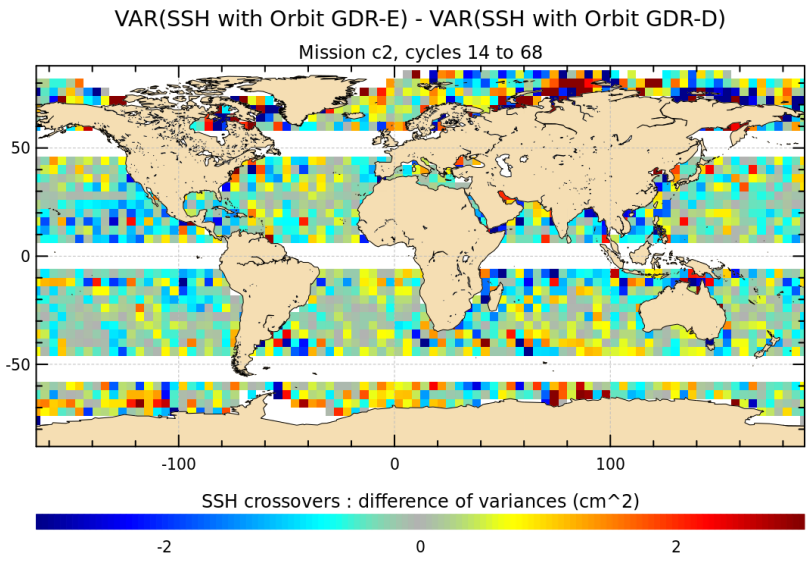
Diagnostic type : Mono-mission analyses

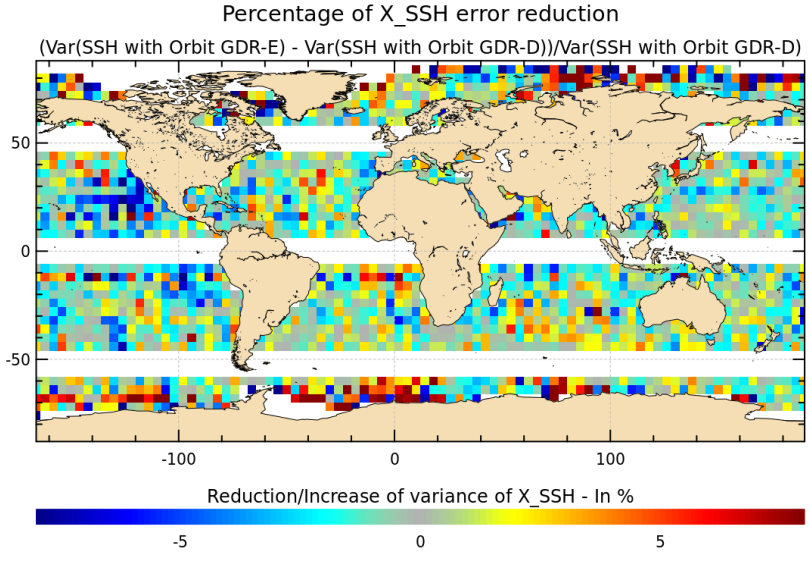
Diagnostic A104 (mission c2)

Name : Differences between maps of SSH crossovers

Input data : Sea Surface Height (SSH) crossovers

Description : The differences between maps of SSH crossovers (derived from diagnostic A103) are calculated from the SSH crossover differences (mean, standard deviation) using successively both altimetric components in the SSH calculation. SSH crossovers are the differences between ascending and descending passes for time differences between both passes lower than 10 days (in order to reduce the effect of the oceanic variability).





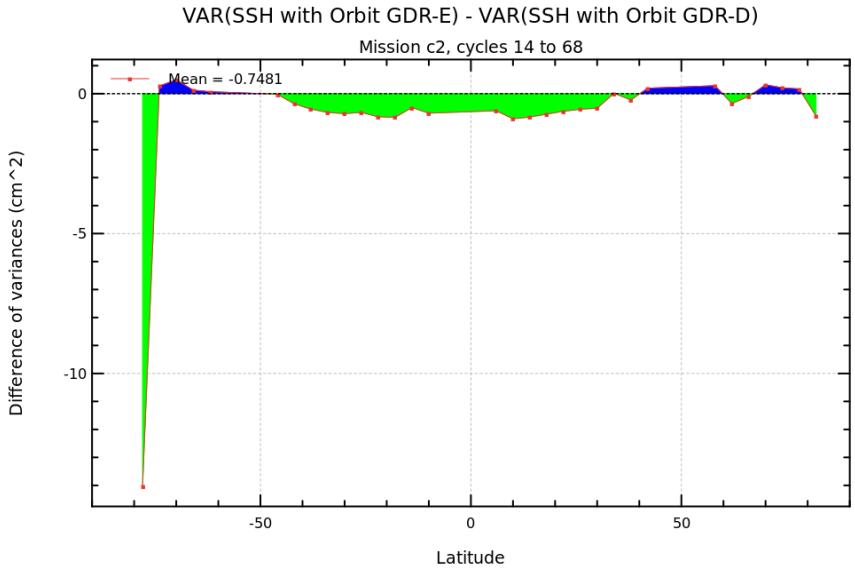
Diagnostic type : Mono-mission analyses

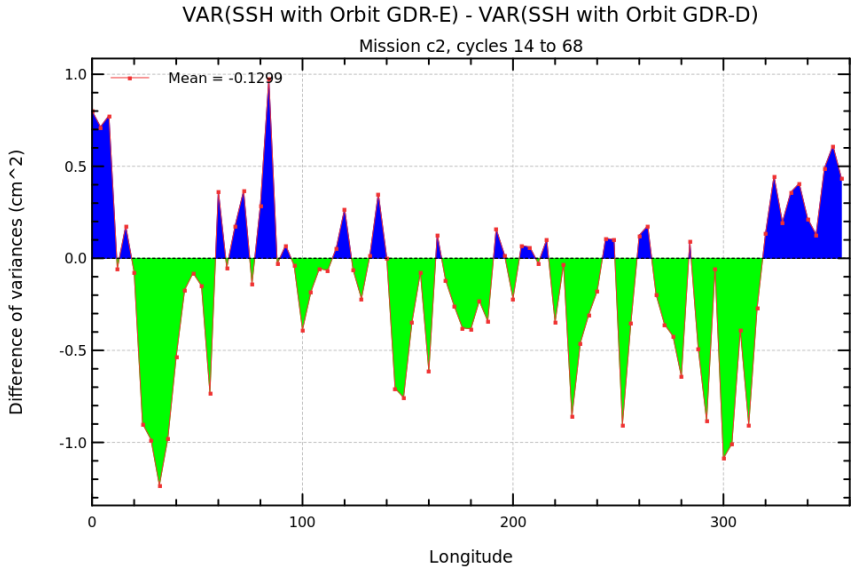
Diagnostic A105 (mission c2)

Name : Differences between SSH crossovers vs coastal distance

Input data : Sea Surface Height (SSH) crossovers

Description : The differences of SSH variances at crossovers are plotted in function of coastal distance, latitudes and longitudes.





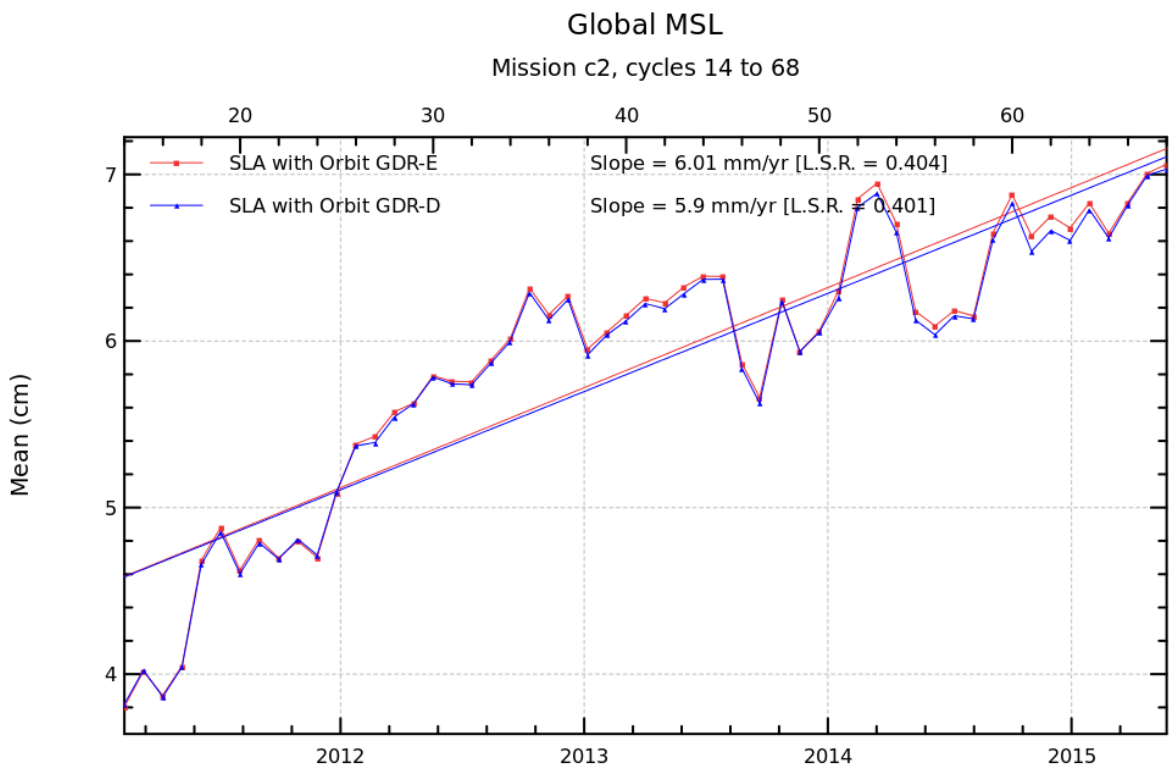
Diagnostic type : Mono-mission analyses

Diagnostic A201_a (mission c2)

Name : Temporal evolution of Sea Level Anomaly (SLA)

Input data : Along track SLA

Description : The temporal evolution of SLA statistics (mean, standard deviation) are calculated from a cyclic way (altimeter repetivity, daily, weekly, monthly) using successively both altimetric components in the SLA calculation. These statistics are calculated from 1 Hz altimetric measurements after removing spurious sea level measurements. They are calculated globally, but also separating ascending and descending passes, or separating North and South hemispheres.



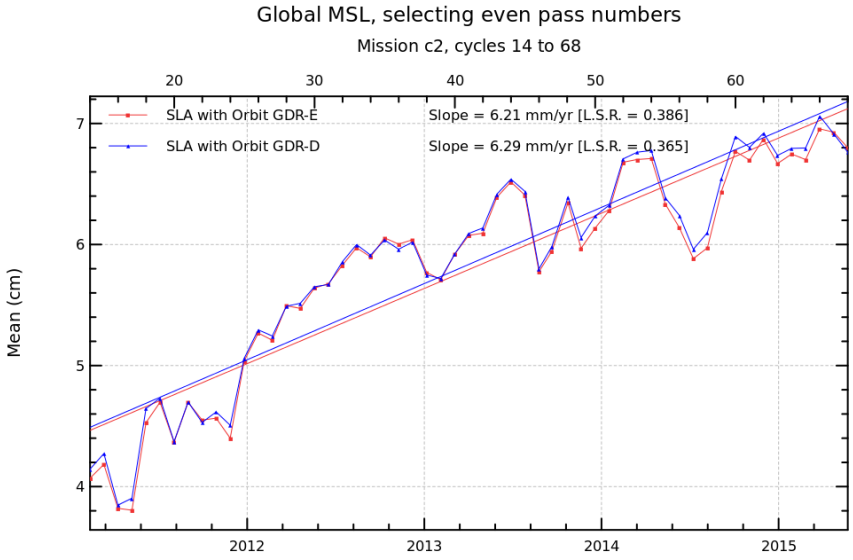
Diagnostic type : Mono-mission analyses

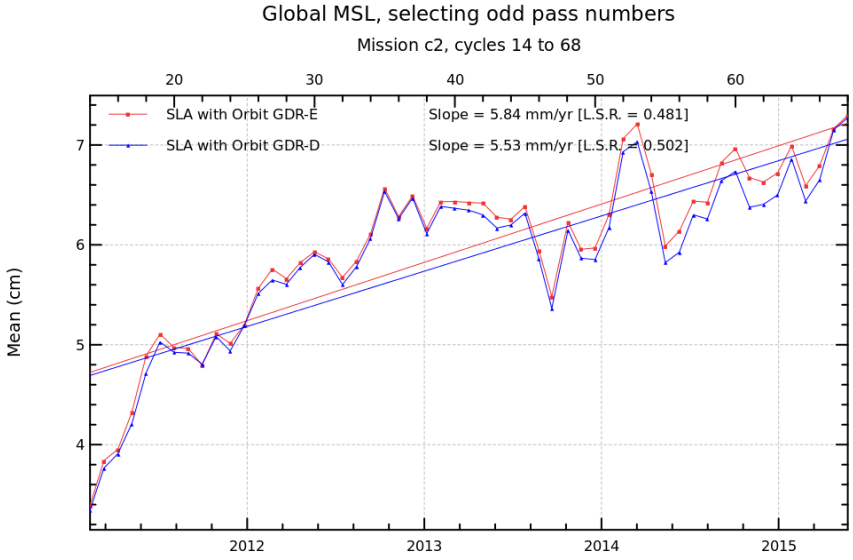
Diagnostic A201_b (mission c2)

Name : Temporal evolution of Sea Level Anomaly (SLA)

Input data : Along track SLA

Description : The temporal evolution of SLA statistics (mean, standard deviation) are calculated from a cyclic way (altimeter repetivity, daily, weekly, monthly) using successively both altimetric components in the SLA calculation. These statistics are calculated from 1 Hz altimetric measurements after removing spurious sea level measurements. They are calculated globally, but also separating ascending and descending passes, or separating North and South hemispheres.





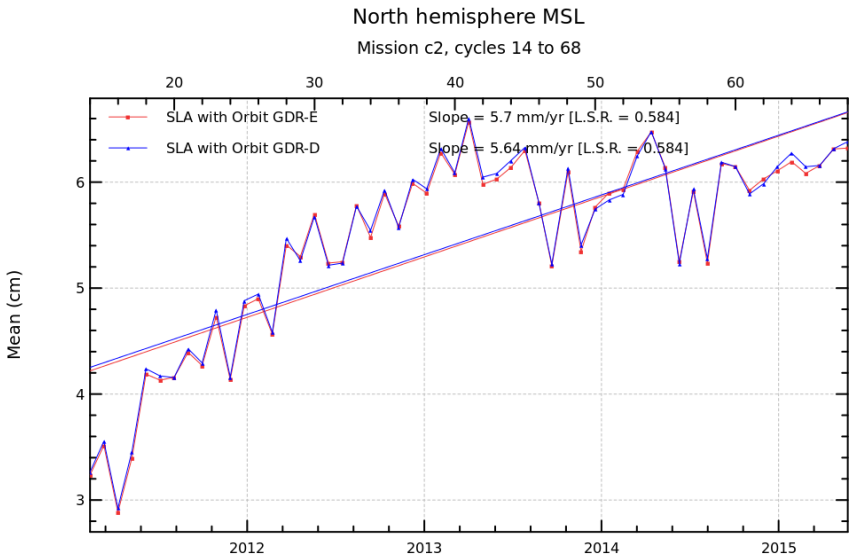
Diagnostic type : Mono-mission analyses

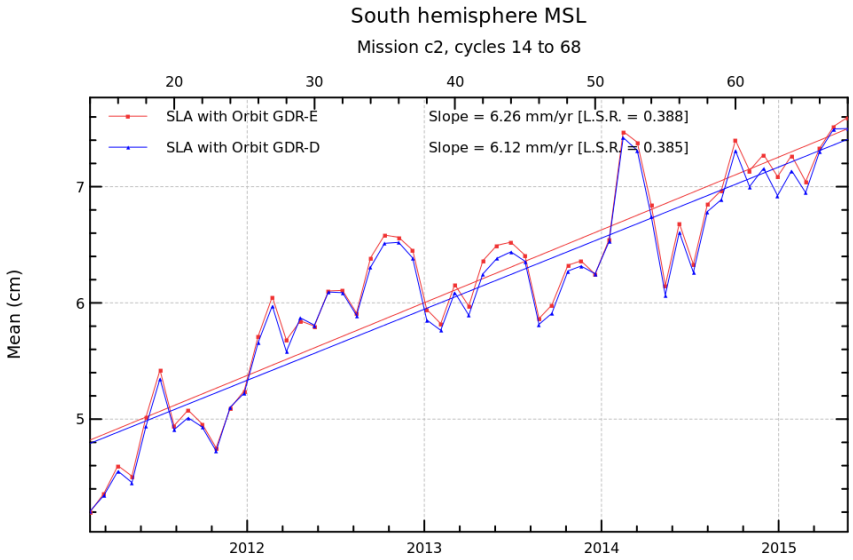
Diagnostic A201_c (mission c2)

Name : Temporal evolution of Sea Level Anomaly (SLA)

Input data : Along track SLA

Description : The temporal evolution of SLA statistics (mean, standard deviation) are calculated from a cyclic way (altimeter repetivity, daily, weekly, monthly) using successively both altimetric components in the SLA calculation. These statistics are calculated from 1 Hz altimetric measurements after removing spurious sea level measurements. They are calculated globally, but also separating ascending and descending passes, or separating North and South hemispheres.





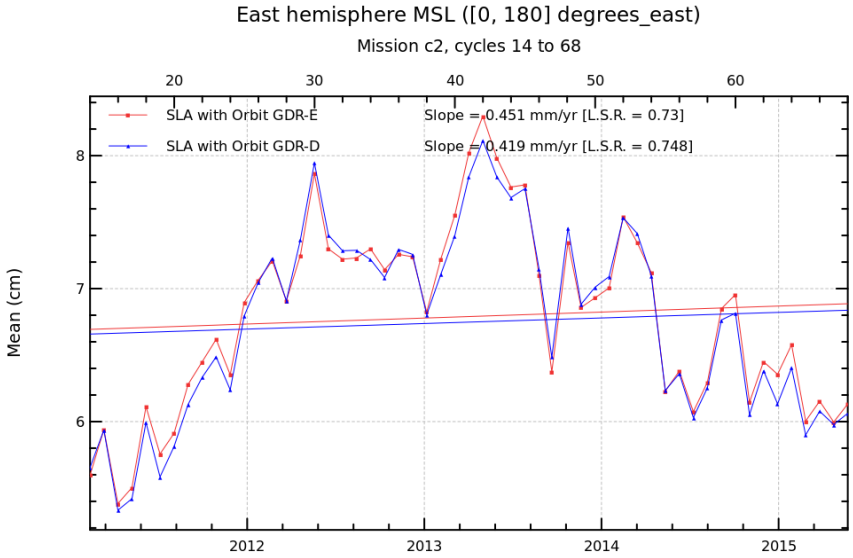
Diagnostic type : Mono-mission analyses

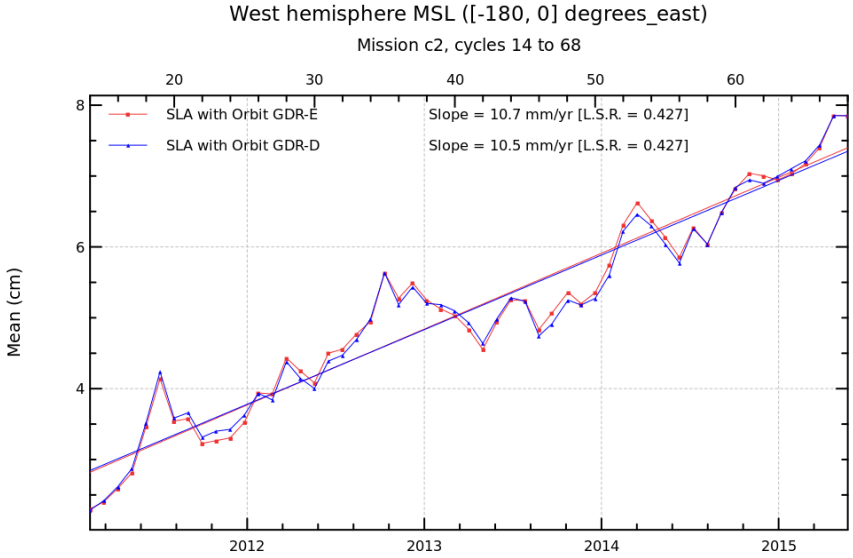
Diagnostic A201_d (mission c2)

Name : Temporal evolution of Sea Level Anomaly (SLA)

Input data : Along track SLA

Description : The temporal evolution of SLA statistics (mean, standard deviation) are calculated from a cyclic way (altimeter repetivity, daily, weekly, monthly) using successively both altimetric components in the SLA calculation. These statistics are calculated from 1 Hz altimetric measurements after removing spurious sea level measurements. They are calculated globally, but also separating ascending and descending passes, or separating North and South hemispheres.





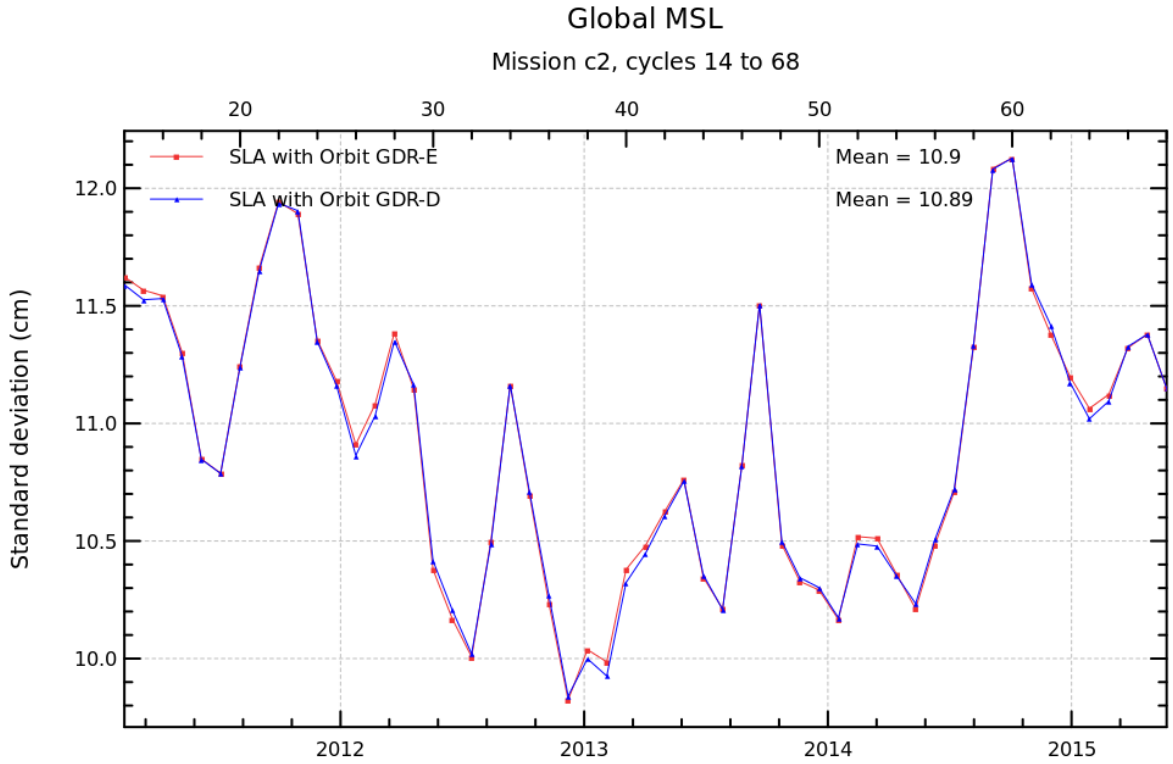
Diagnostic type : Mono-mission analyses

Diagnostic A201_e (mission c2)

Name : Temporal evolution of Sea Level Anomaly (SLA)

Input data : Along track SLA

Description : The temporal evolution of SLA statistics (mean, standard deviation) are calculated from a cyclic way (altimeter repetivity, daily, weekly, monthly) using successively both altimetric components in the SLA calculation. These statistics are calculated from 1 Hz altimetric measurements after removing spurious sea level measurements. They are calculated globally, but also separating ascending and descending passes, or separating North and South hemispheres.



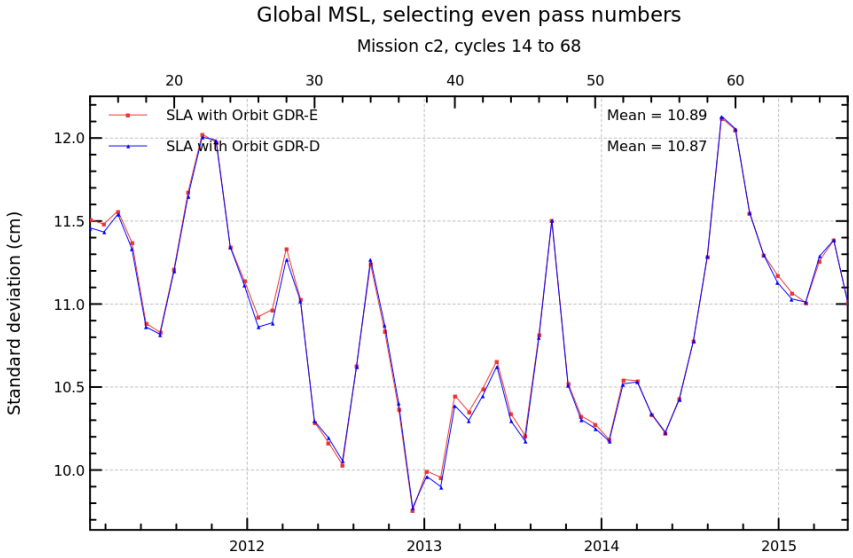
Diagnostic type : Mono-mission analyses

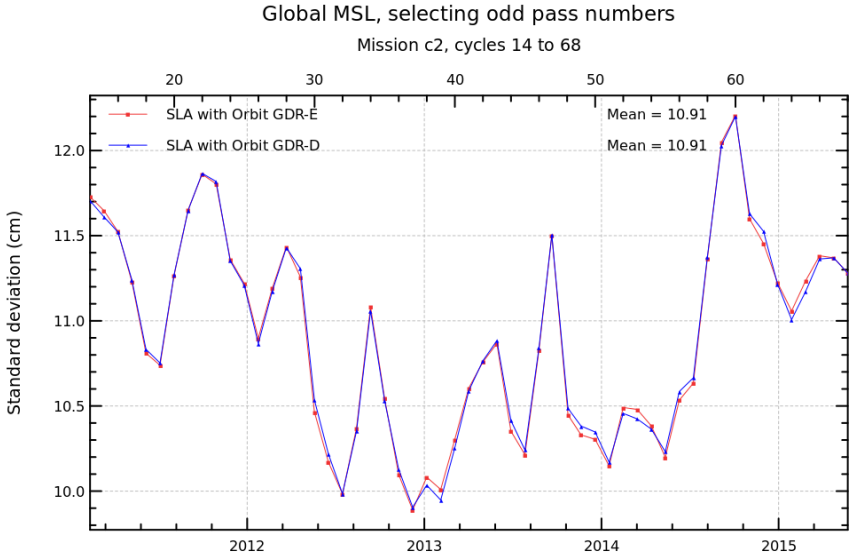
Diagnostic A201_f (mission c2)

Name : Temporal evolution of Sea Level Anomaly (SLA)

Input data : Along track SLA

Description : The temporal evolution of SLA statistics (mean, standard deviation) are calculated from a cyclic way (altimeter repetivity, daily, weekly, monthly) using successively both altimetric components in the SLA calculation. These statistics are calculated from 1 Hz altimetric measurements after removing spurious sea level measurements. They are calculated globally, but also separating ascending and descending passes, or separating North and South hemispheres.





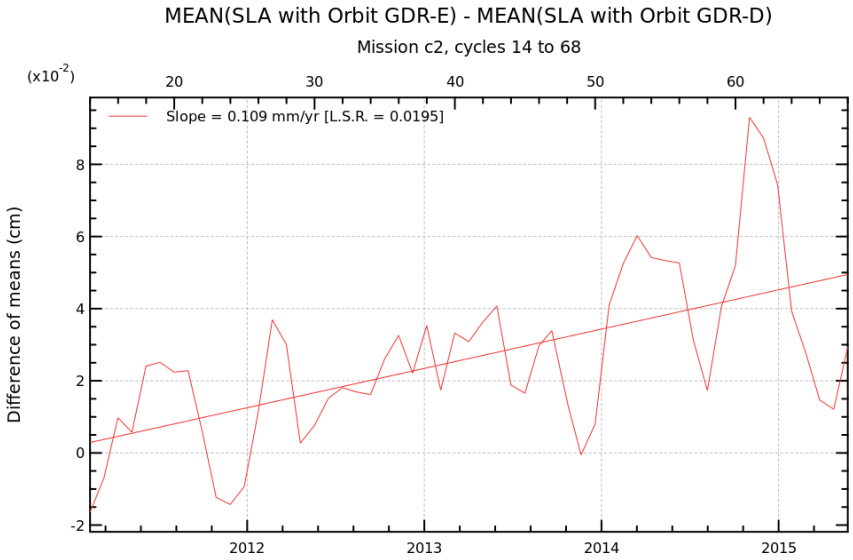
Diagnostic type : Mono-mission analyses

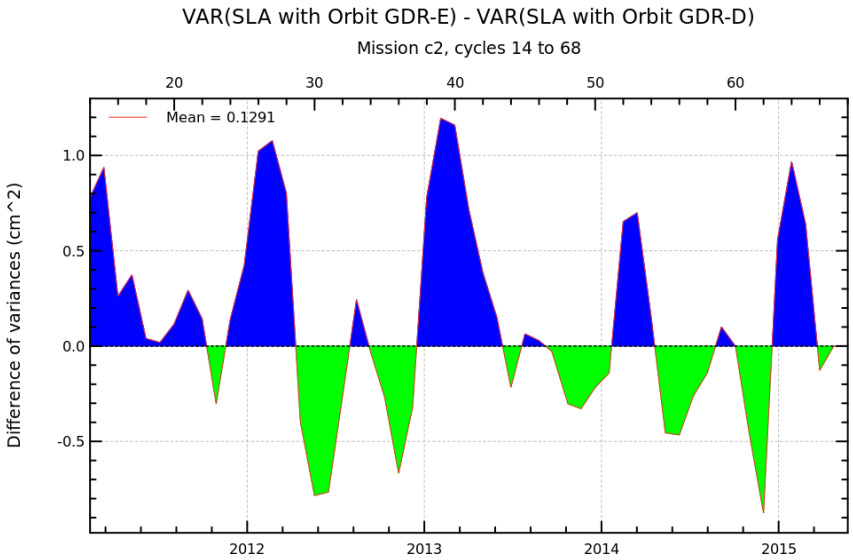
Diagnostic A202_a (mission c2)

Name : Differences between temporal evolution of Sea Level Anomaly (SLA)

Input data : Along track SLA

Description : The differences between temporal evolution of SLA are calculated from statistics derived from diagnostic A201 (mean, variance) using 2 different components in the SLA calculation. They are calculated globally, but also separating ascending and descending passes or separating North and South hemispheres.





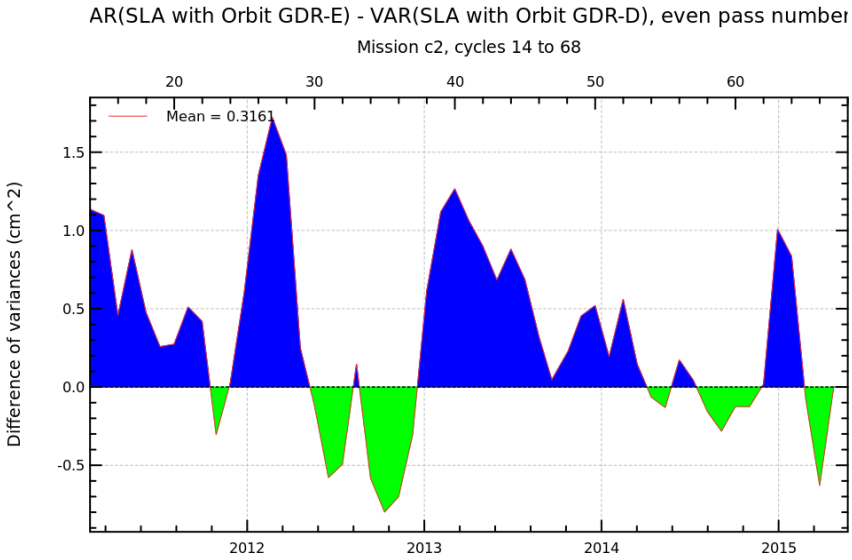
Diagnostic type : Mono-mission analyses

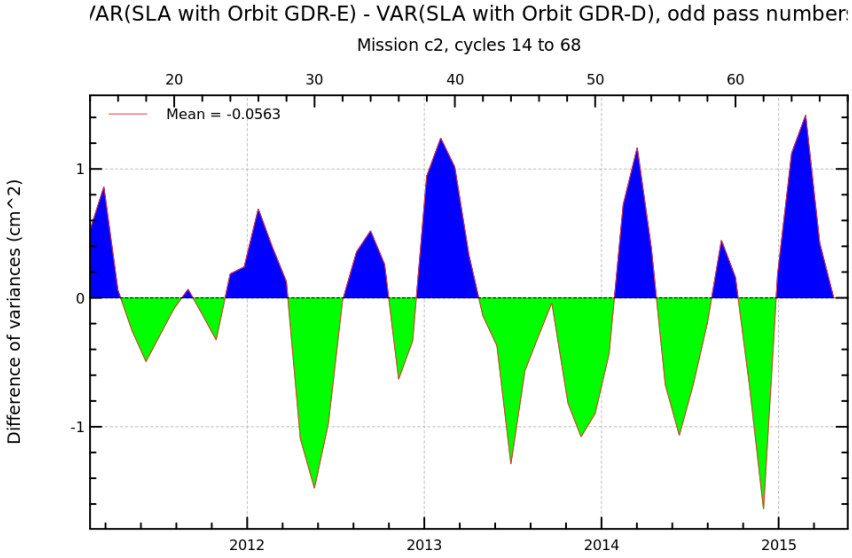
Diagnostic A202_b (mission c2)

Name : Differences between temporal evolution of Sea Level Anomaly (SLA)

Input data : Along track SLA

Description : The differences between temporal evolution of SLA are calculated from statistics derived from diagnostic A201 (mean, variance) using 2 different components in the SLA calculation. They are calculated globally, but also separating ascending and descending passes or separating North and South hemispheres.





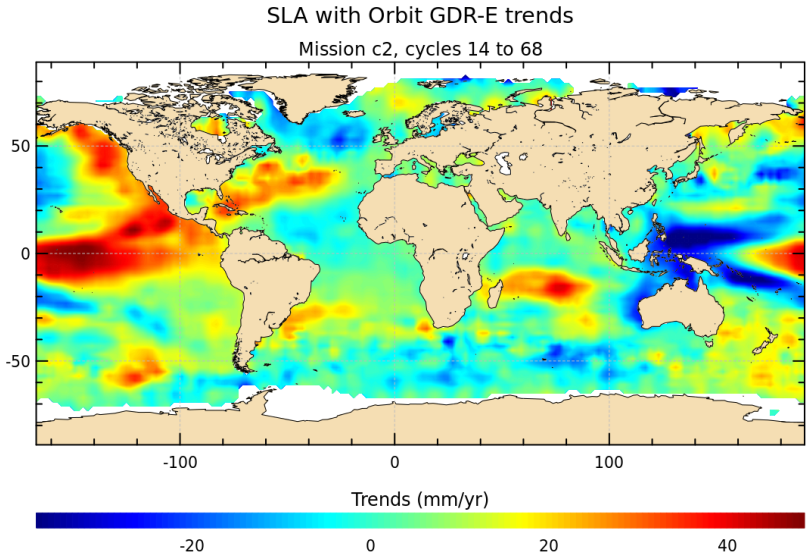
Diagnostic type : Mono-mission analyses

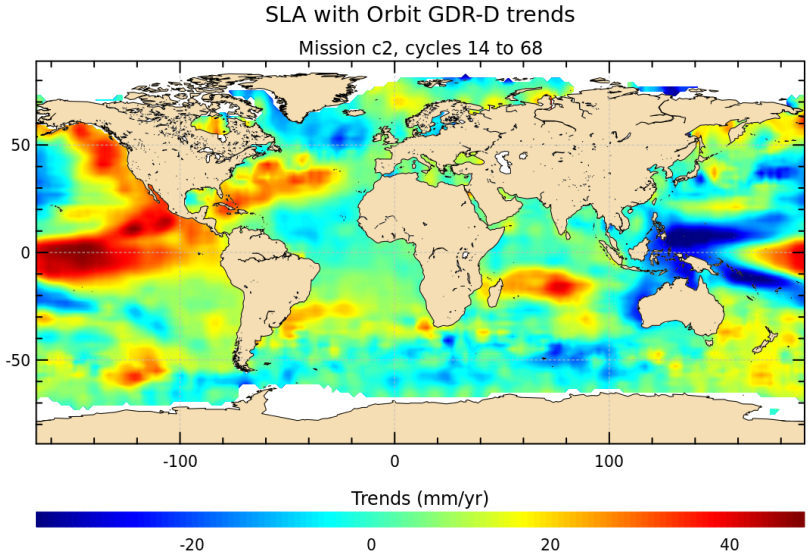
Diagnostic A203_a (mission c2)

Name : Map of Sea Level Anomaly (SLA) over all the period

Input data : Along track SLA

Description : The map of global statistics (mean, standard deviation) of SLA are calculated using successively both altimetric components in the SLA calculation over a large period. These statistics are calculated from 1 Hz altimetric measurements after removing spurious sea level measurements.





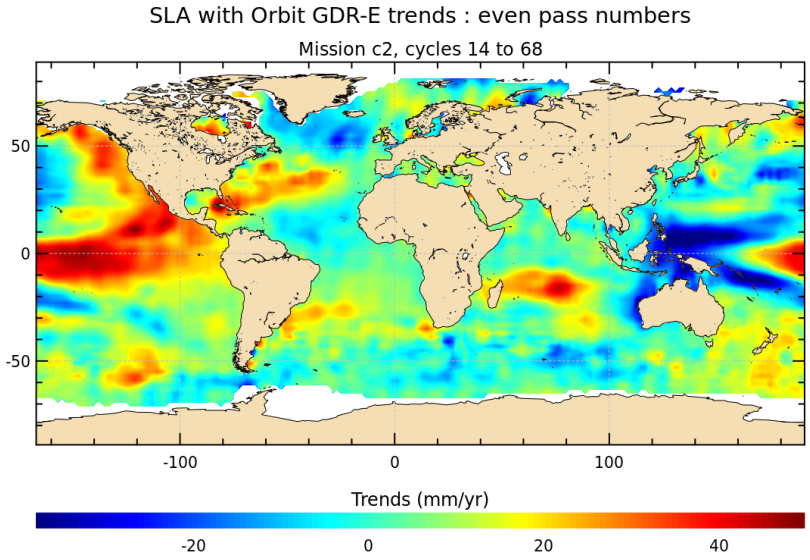
Diagnostic type : Mono-mission analyses

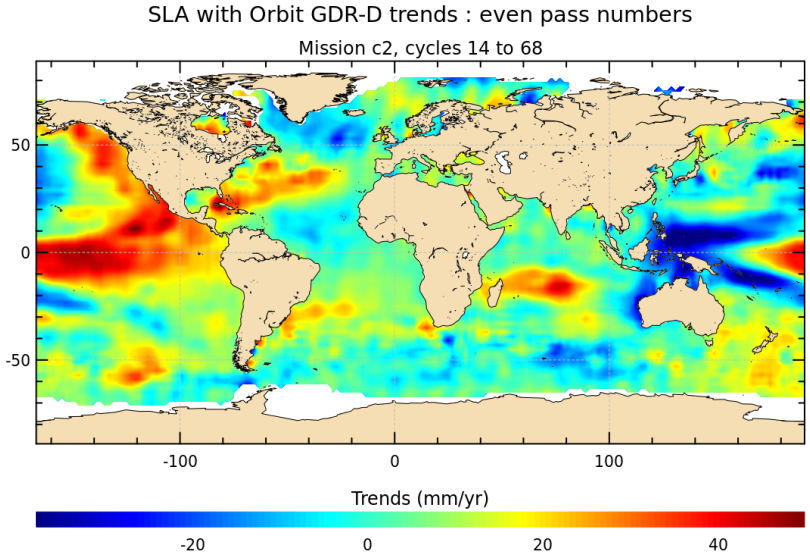
Diagnostic A203_b (mission c2)

Name : Map of Sea Level Anomaly (SLA) over all the period

Input data : Along track SLA

Description : The map of global statistics (mean, standard deviation) of SLA are calculated using successively both altimetric components in the SLA calculation over a large period. These statistics are calculated from 1 Hz altimetric measurements after removing spurious sea level measurements.





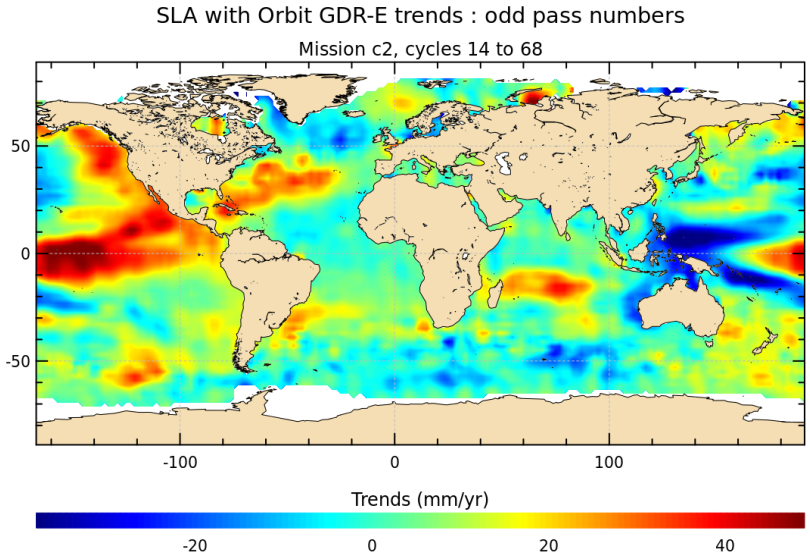
Diagnostic type : Mono-mission analyses

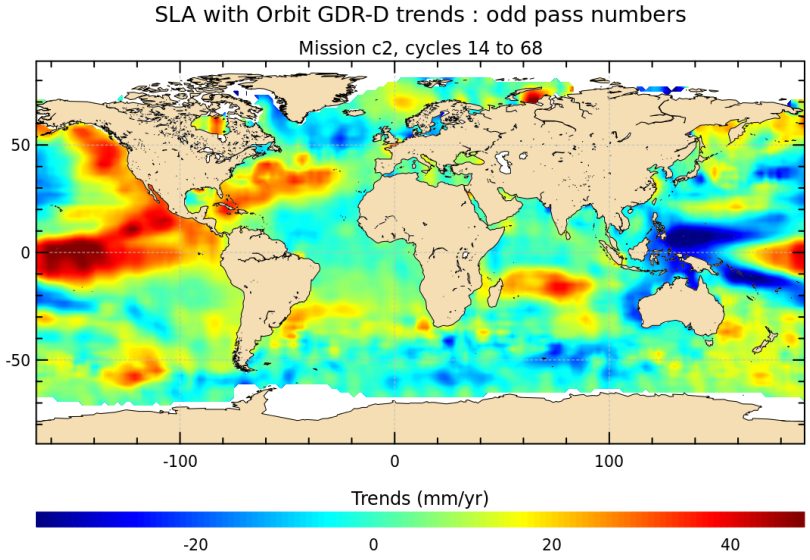
Diagnostic A203_c (mission c2)

Name : Map of Sea Level Anomaly (SLA) over all the period

Input data : Along track SLA

Description : The map of global statistics (mean, standard deviation) of SLA are calculated using successively both altimetric components in the SLA calculation over a large period. These statistics are calculated from 1 Hz altimetric measurements after removing spurious sea level measurements.





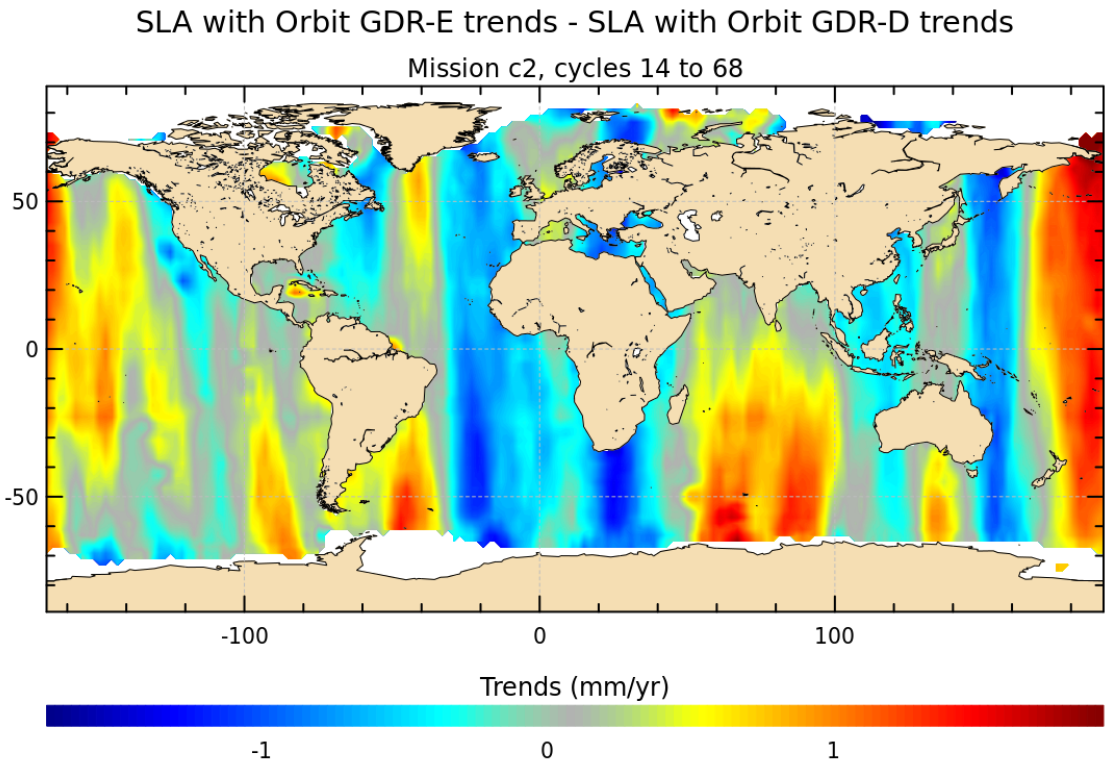
Diagnostic type : Mono-mission analyses

Diagnostic A204_a (mission c2)

Name : Differences between maps of SLA trends

Input data : Along track SLA

Description : The difference of SLA maps (mean, standard deviation, slope) is calculated from maps derived from diagnostic A203 using successively both altimetric components in the SLA calculation over a given period. This can be done globally, or separating in ascending and descending passes (except for SLA Grids).



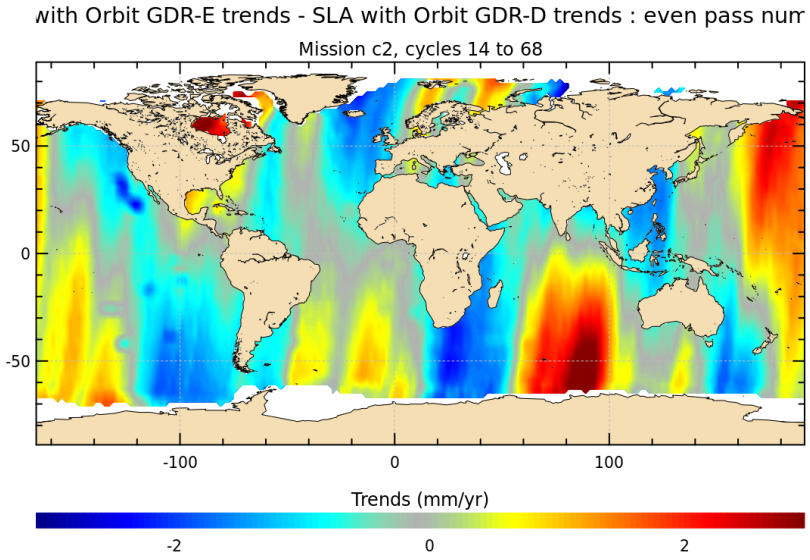
Diagnostic type : Mono-mission analyses

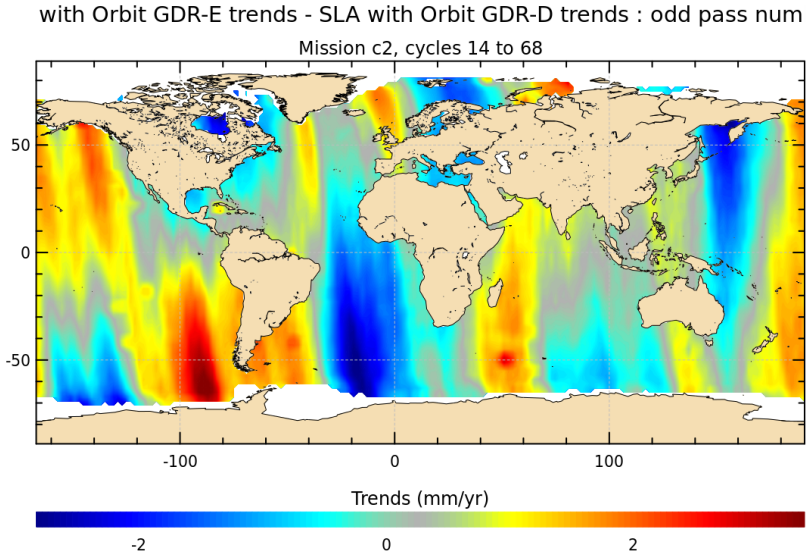
Diagnostic A204_b (mission c2)

Name : Differences between maps of SLA trends

Input data : Along track SLA

Description : The difference of SLA maps (mean, standard deviation, slope) is calculated from maps derived from diagnostic A203 using successively both altimetric components in the SLA calculation over a given period. This can be done globally, or separating in ascending and descending passes (except for SLA Grids).





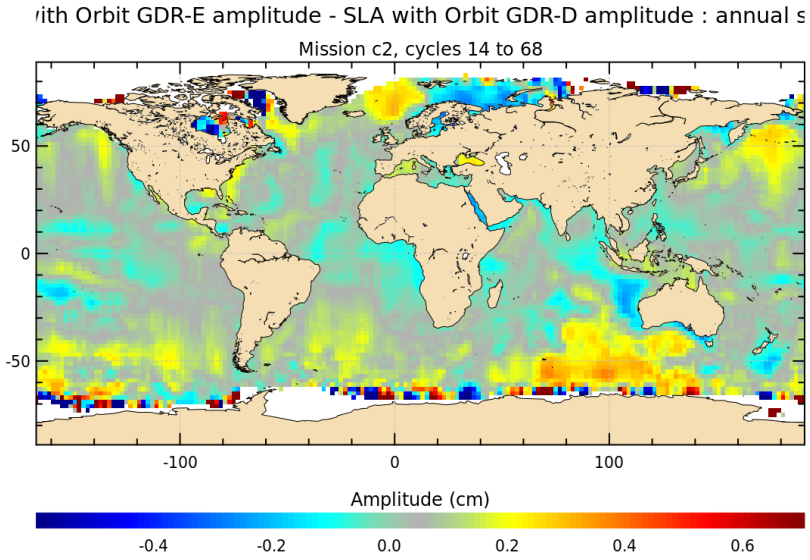
Diagnostic type : Mono-mission analyses

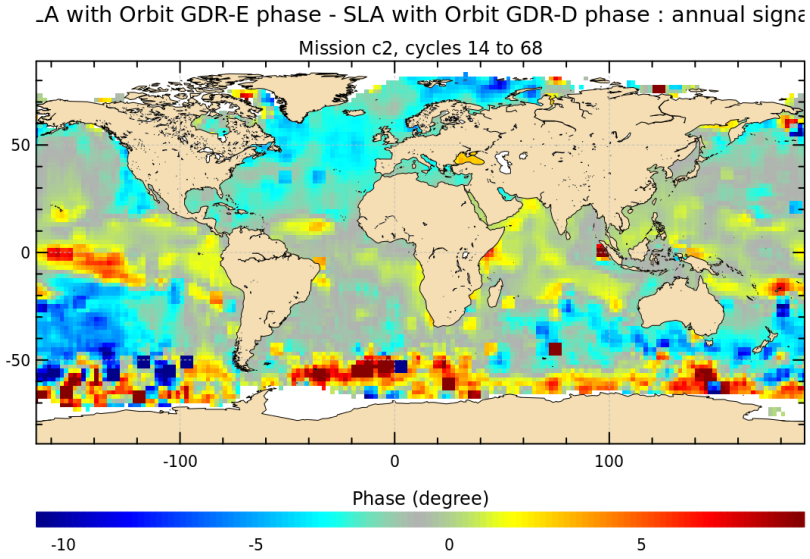
Diagnostic A205_a (mission c2)

Name : Differences between maps of SLA amplitude and phase

Input data : Along track SLA

Description : The difference of SLA maps (mean, standard deviation, slope) is calculated from maps derived from diagnostic A203 using successively both altimetric components in the SLA calculation over a given period. This can be done globally, or separating in ascending and descending passes (except for SLA Grids).





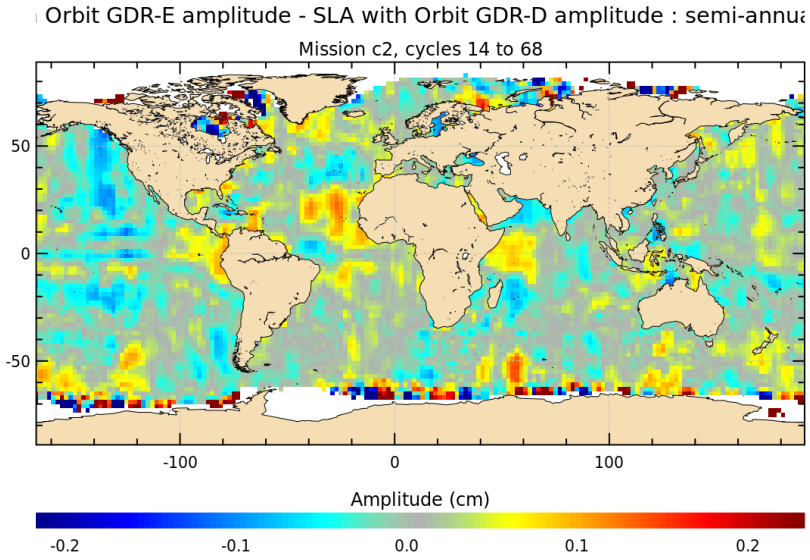
Diagnostic type : Mono-mission analyses

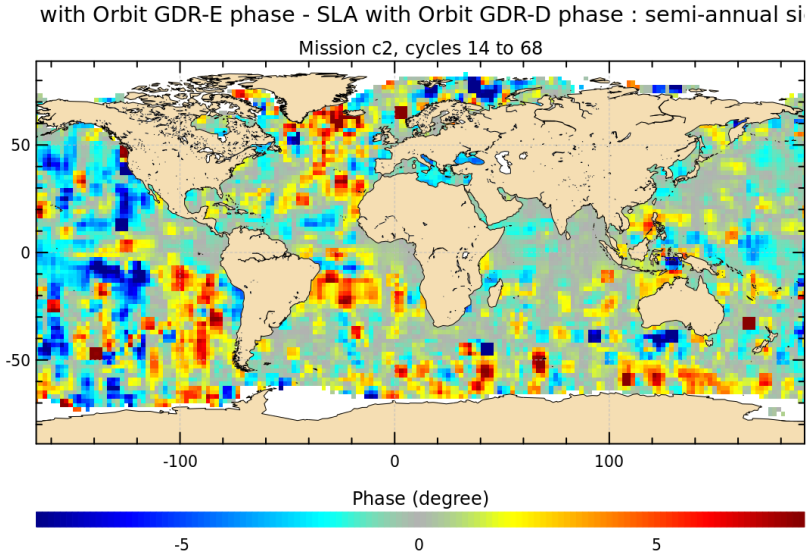
Diagnostic A205_b (mission c2)

Name : Differences between maps of SLA amplitude and phase

Input data : Along track SLA

Description : The difference of SLA maps (mean, standard deviation, slope) is calculated from maps derived from diagnostic A203 using successively both altimetric components in the SLA calculation over a given period. This can be done globally, or separating in ascending and descending passes (except for SLA Grids).





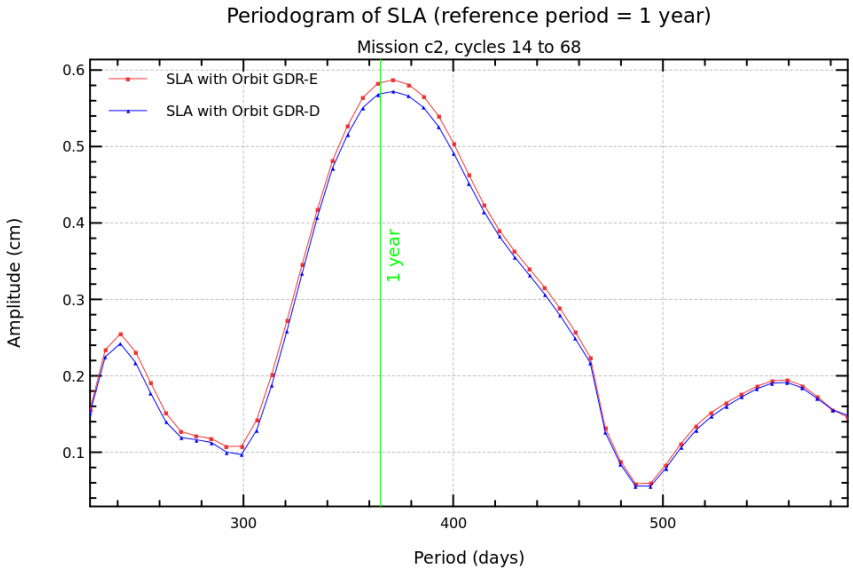
Diagnostic type : Mono-mission analyses

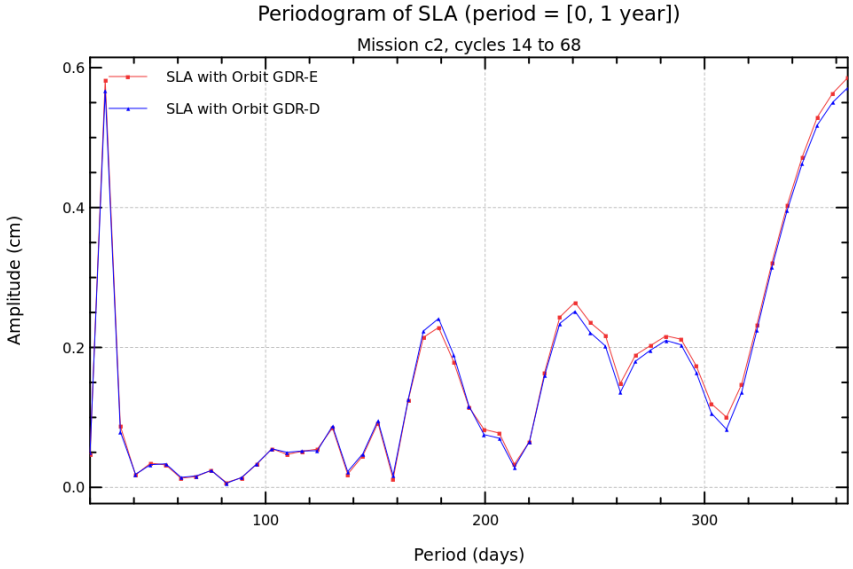
Diagnostic A206_a (mission c2)

Name : Periodogram derived from temporal evolution of Sea Level Anomaly (SLA)

Input data : Along track SLA

Description : The periodogram derived from temporal evolution of SLA (global, northern or southern hemisphere) can be done over all periods or focusing on particular periods, such as annual, semi annual or 60 day signal. Therefore mean of SLA differences are computed (every day or cycle), and time data series are plotted as a periodogram.





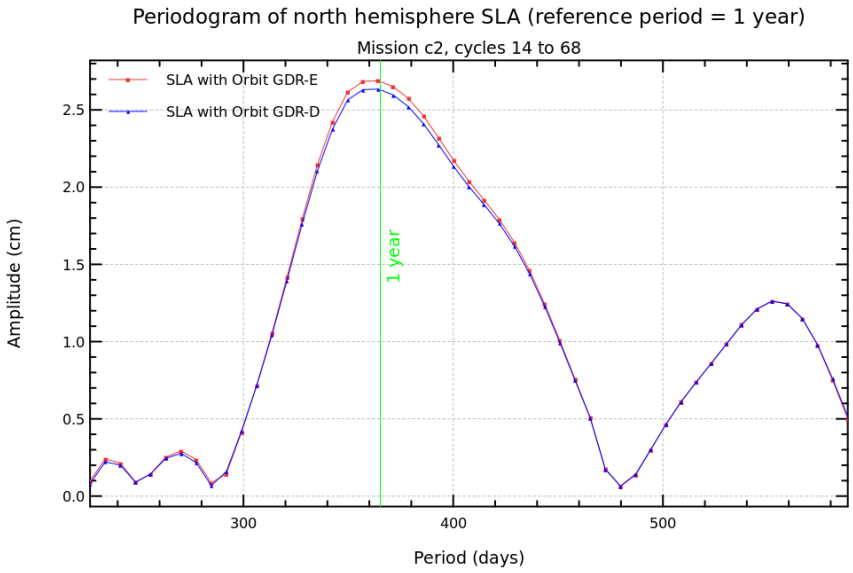
Diagnostic type : Mono-mission analyses

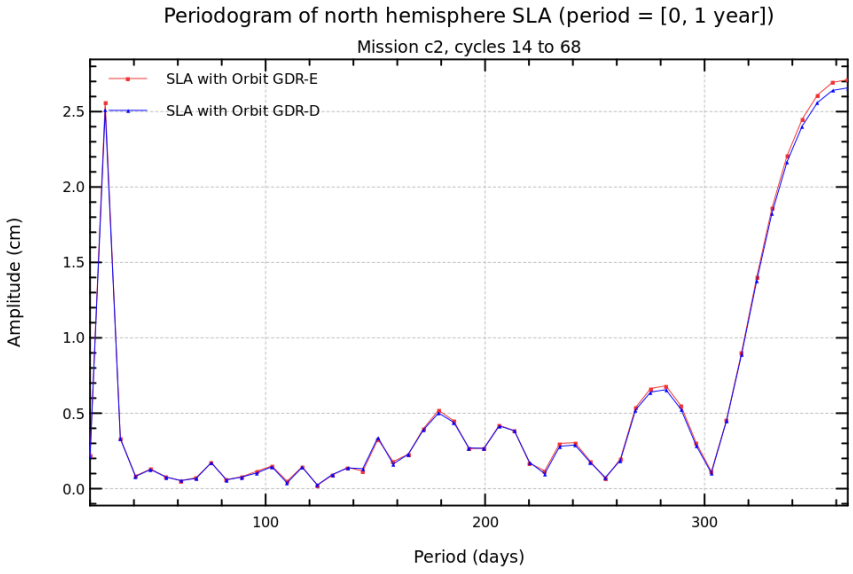
Diagnostic A206_b (mission c2)

Name : Periodogram derived from temporal evolution of Sea Level Anomaly (SLA)

Input data : Along track SLA

Description : The periodogram derived from temporal evolution of SLA (global, northern or southern hemisphere) can be done over all periods or focusing on particular periods, such as annual, semi annual or 60 day signal. Therefore mean of SLA differences are computed (every day or cycle), and time data series are plotted as a periodogram.





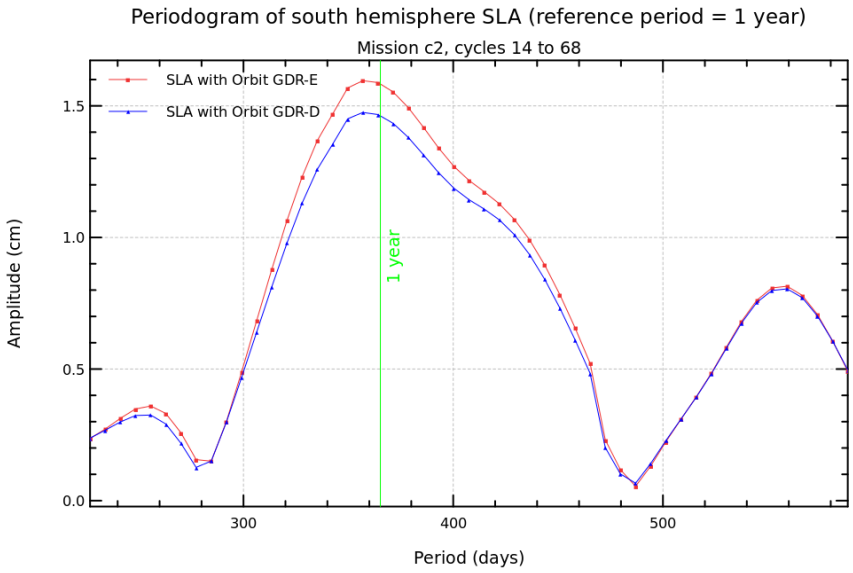
Diagnostic type : Mono-mission analyses

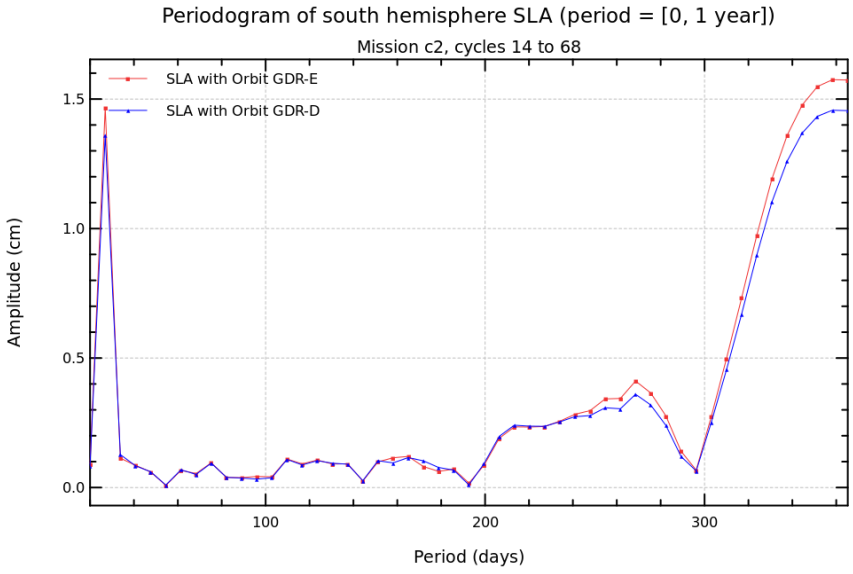
Diagnostic A206_c (mission c2)

Name : Periodogram derived from temporal evolution of Sea Level Anomaly (SLA)

Input data : Along track SLA

Description : The periodogram derived from temporal evolution of SLA (global, northern or southern hemisphere) can be done over all periods or focusing on particular periods, such as annual, semi annual or 60 day signal. Therefore mean of SLA differences are computed (every day or cycle), and time data series are plotted as a periodogram.





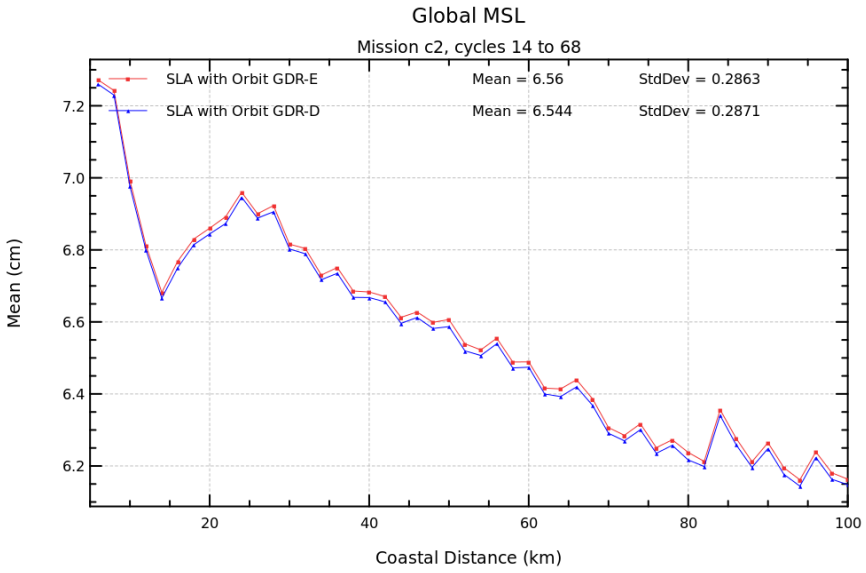
Diagnostic type : Mono-mission analyses

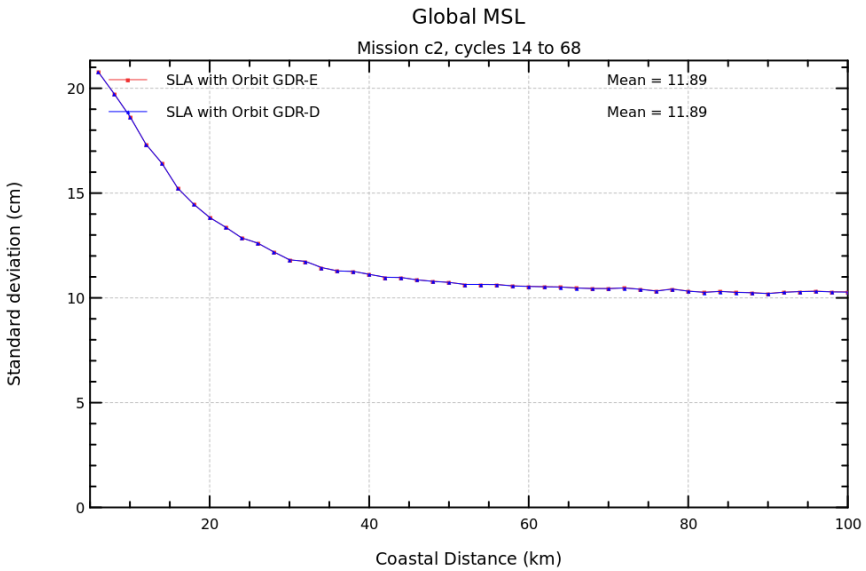
Diagnostic A207 (mission c2)

Name : Sea Level Anomaly (SLA) versus coastal distance

Input data : Along track SLA

Description : Mean and standard deviation of SLA - computed by using successively both altimetric components - are plotted in function of coastal distances between 0 and 100 km.





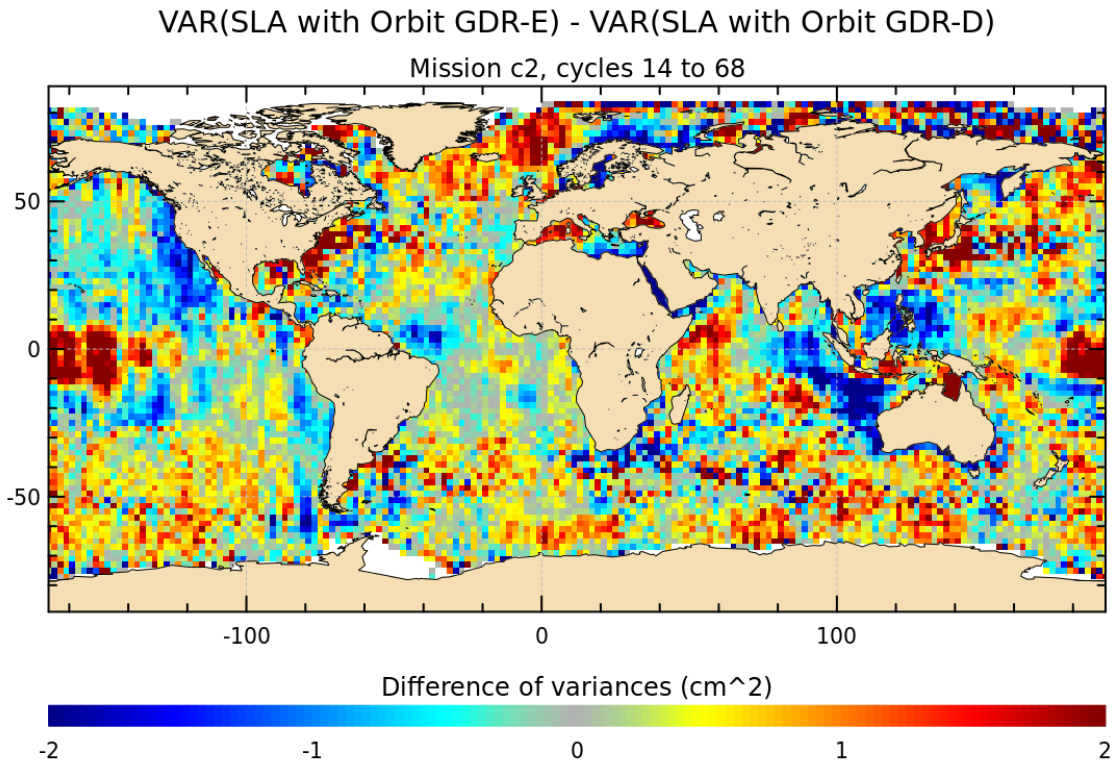
Diagnostic type : Mono-mission analyses

Diagnostic A209 (mission c2)

Name : Differences between maps of SLA variance

Input data : Along track SLA

Description : The differences between maps of SLA are calculated from the SLA differences (mean, standard deviation) using successively both altimetric components in the SLA calculation.



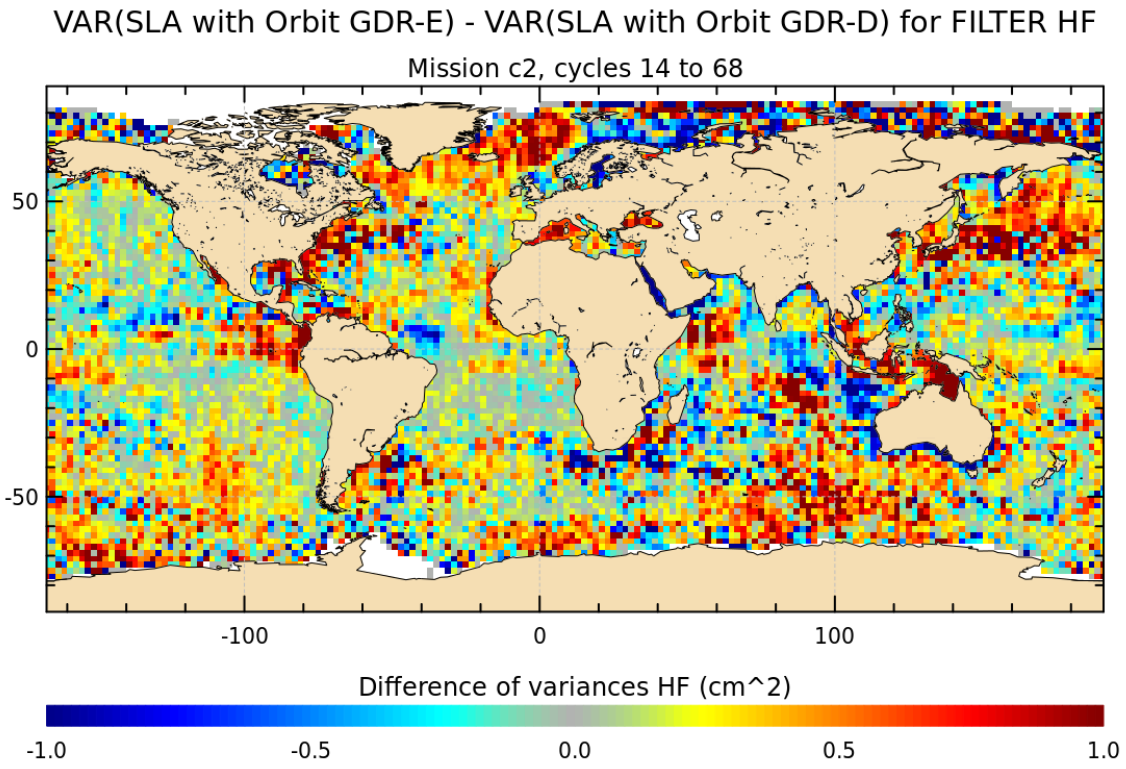
Diagnostic type : Mono-mission analyses

Diagnostic A210_a (mission c2)

Name : Differences between maps of SLA variance for different frequency bands

Input data : Along track SLA

Description : The differences between maps of SLA (variance) are calculated from the mean SLA maps using successively both altimetric components in the SLA calculation filtered to separate high-frequency (T $<$ 1 yr), mid-frequency (1 yr $<$ T $<$ 3 yrs) and low-frequency (T $>$ 3 yrs) signals.



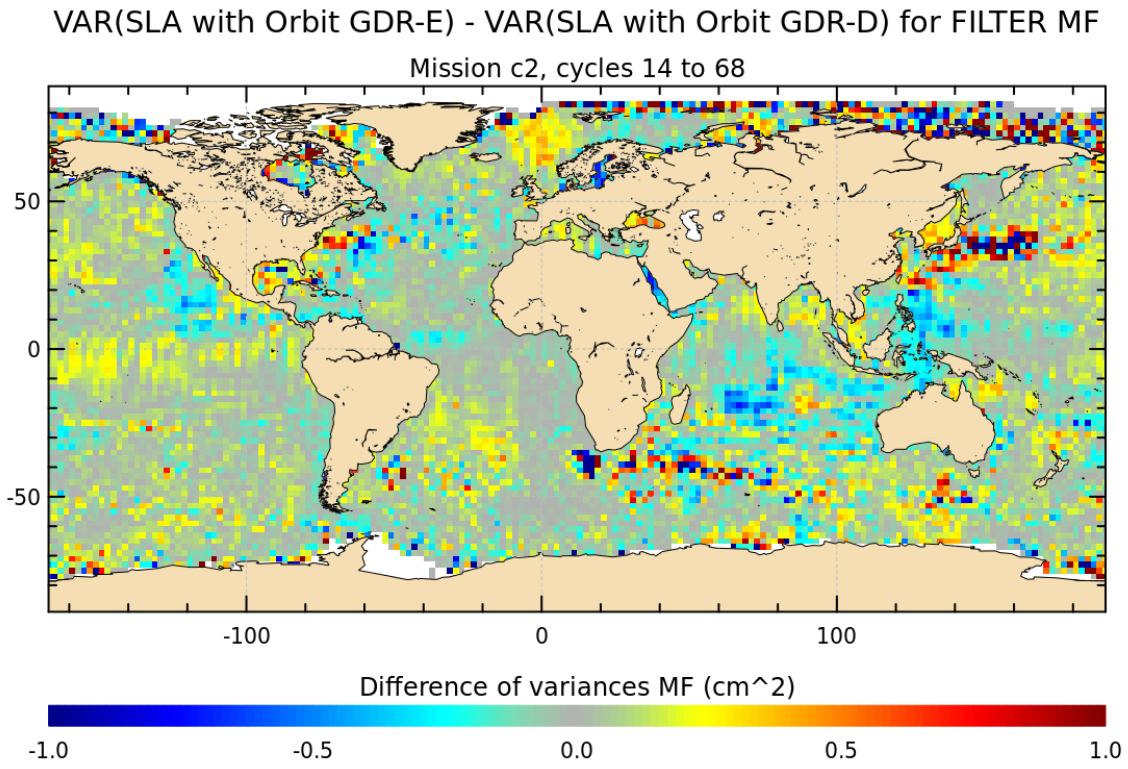
Diagnostic type : Mono-mission analyses

Diagnostic A210_b (mission c2)

Name : Differences between maps of SLA variance for different frequency bands

Input data : Along track SLA

Description : The differences between maps of SLA (variance) are calculated from the mean SLA maps using successively both altimetric components in the SLA calculation filtered to separate high-frequency (T $<$ 1 yr), mid-frequency (1 yr $<$ T $<$ 3 yrs) and low-frequency (T $>$ 3 yrs) signals.



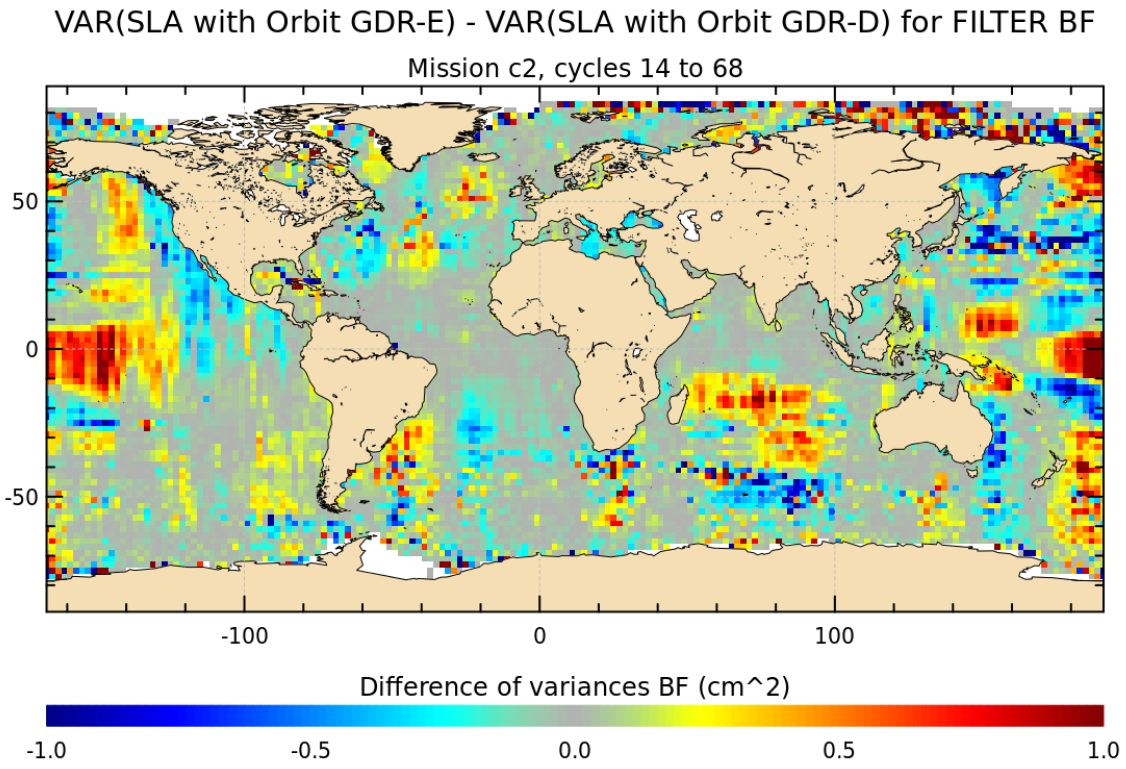
Diagnostic type : Mono-mission analyses

Diagnostic A210_c (mission c2)

Name : Differences between maps of SLA variance for different frequency bands

Input data : Along track SLA

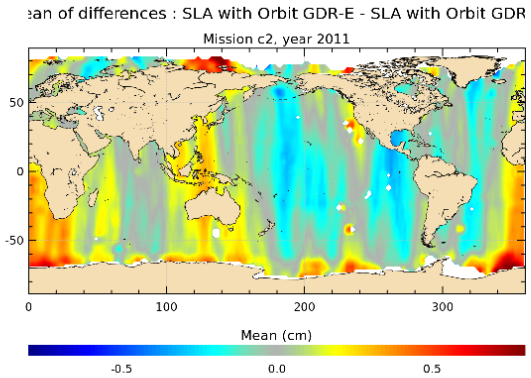
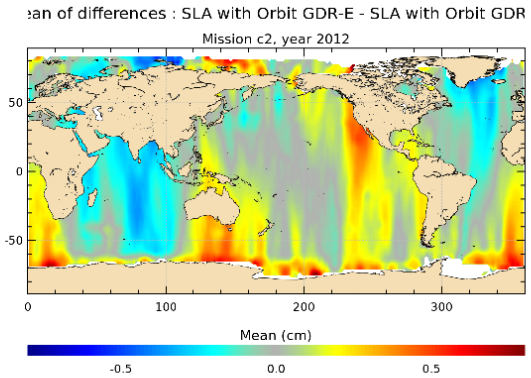
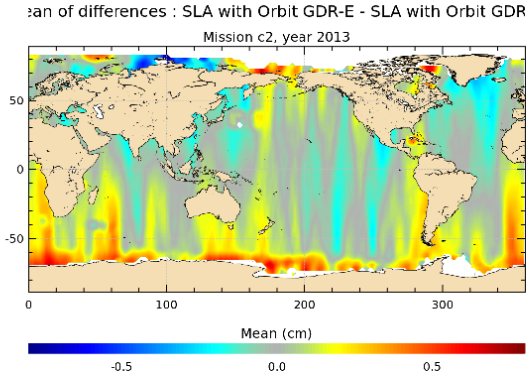
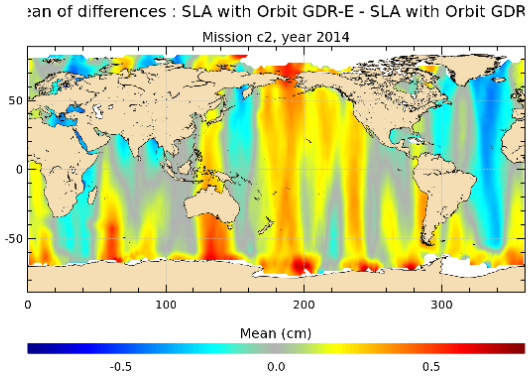
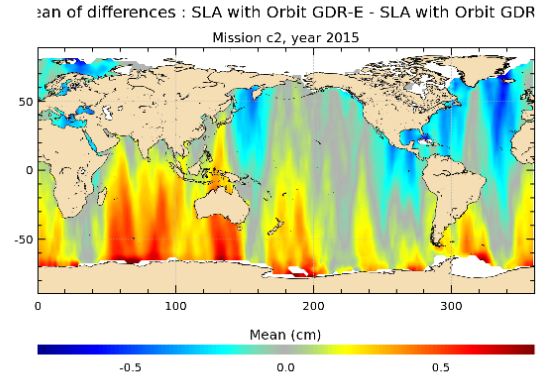
Description : The differences between maps of SLA (variance) are calculated from the mean SLA maps using successively both altimetric components in the SLA calculation filtered to separate high-frequency (T $<$ 1 yr), mid-frequency (1 yr $<$ T $<$ 3 yrs) and low-frequency (T $>$ 3 yrs) signals.



Diagnostic type : Mono-mission analyses

Diagnostic A211 (mission c2)

Name : Differences between maps of SLA per year

Input data : Along track SLA

Description : The differences between map of SLA (mean) are calculated for each year using successively both altimetric components in the SLA calculation